第 5 章　工程実績

5.1　SOP 活動における工程実績

実施計画（PO3：2013 年 10 月）と比較した SOP 活動の工程実績は図、5-1 に示すとおりである。

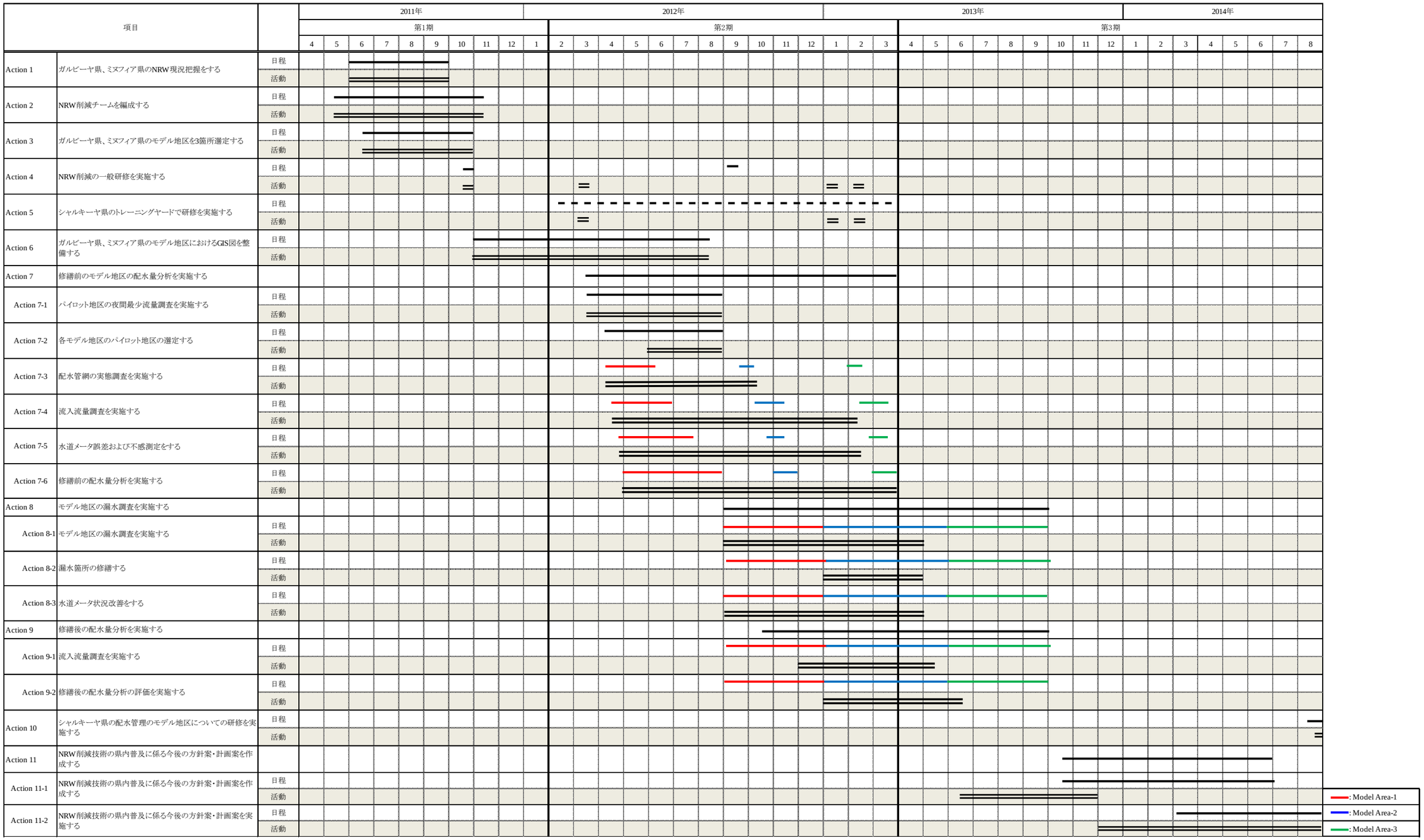
項目			2011年										2012年												2013年												2014年							
			第1期										第2期												第3期																			
			4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Action-1	ガルビーヤ県・ミヌフィア県の上水道施設の現状を調査する																																										
1-1	表流水浄水場、鉄マンガン及び井戸施設の既存状況調査する	日程																																									
		活動																																									
1-2	水質試験室運転管理に関しての表流水浄水場及び鉄マンガンの基礎データ収集する	日程																																								
		活動																																									
Action-2	ガルビーヤ県・ミヌフィア県のモデル施設を3ヵ所選定する																																										
2-1	ロングリストを整理する	日程																																								
		活動																																									
2-2	モデル施設選定について検討する	日程																																								
		活動																																									
2-3	ショートリストの整理及び基礎調査を実施する	日程																																								
		活動																																									
2-4	詳細調査を実施する	日程																																								
		活動																																									
Action-3	ガルビーヤ県・ミヌフィア県にSOP本部チームを編成する																																										
3-1	GHAPWASCO及びMCWWの本部SOPメンバーを編成する	日程																																								
		活動																																									
3-2	SOPモデル施設チームを編成する	日程																																								
		活動																																									
Action-4	シャルキーヤ県の施設においてSOP作成・適用に関する研修を行う																																										
4-1	シャルキーヤ県のSOP書類の有効性及び評価に関する検討をする	日程																																								
		活動																																									
4-2	問題点の抽出する	日程																																								
		活動																																									
Action-5	必要に応じてSHAPWASCOのSOPを更新・作成する																																										
5-1	SHAPWASCO向け新規SOP書類の整備する	日程																																								
		活動																																									
Action-6	SHAPWASCOのSOPを基にガルビーヤ県・ミヌフィア県のモデル施設において、SOP運用に係るOJTを実施する																																										
6-1	現場状況調査する（C/P組織体制、トレーナー協力体制など）	日程																																								
		活動																																									
6-2	基本システム図を作成する（P&ID及び単線結線図）	日程																																								
		活動																																									
6-3	実施研修及び運転維持管理のSOP書類案を作成する	日程																																								
		活動																																									
6-4	標準運転記録用紙を作成する	日程																																									
		活動																																									
6-5	水質管理調査をする	日程																																								
		活動																																									
6-6	水質管理のSOP書類案を作成する	日程																																								
		活動																																									
Action-7	OJTの実施により、ガルビーヤ県・ミヌフィア県のモデル施設におけるSOP運用を支援する																																										
7-1	OJT研修でSOPを適用する	日程																																								
		活動																																									
Action-8	SOP活動の達成度をモニタリングする																																										
8-1	OJT研修で活動監視記録する	日程																																								
		活動																																									
Action-9	SOPの県内普及に係る今後の方針案・計画案を作成する																																										
9-1	今後のSOP活動目標を策定する	日程																																								
		活動																																									
9-2	ガルビーヤ県・ミヌフィア県のSOPの県内普及に係る今後の方針案・計画案を作成する	日程																																								
		活動																																									

注：ベースは PO3 である。

図 5-1　SOP 活動の実施計画及び工程実績

5.2 NRW 削減活動における工程実績

実施計画（PO3：2013 年 10 月）と比較した NRW 削減活動の工程実績は、図 5-2 に示すとおりである。

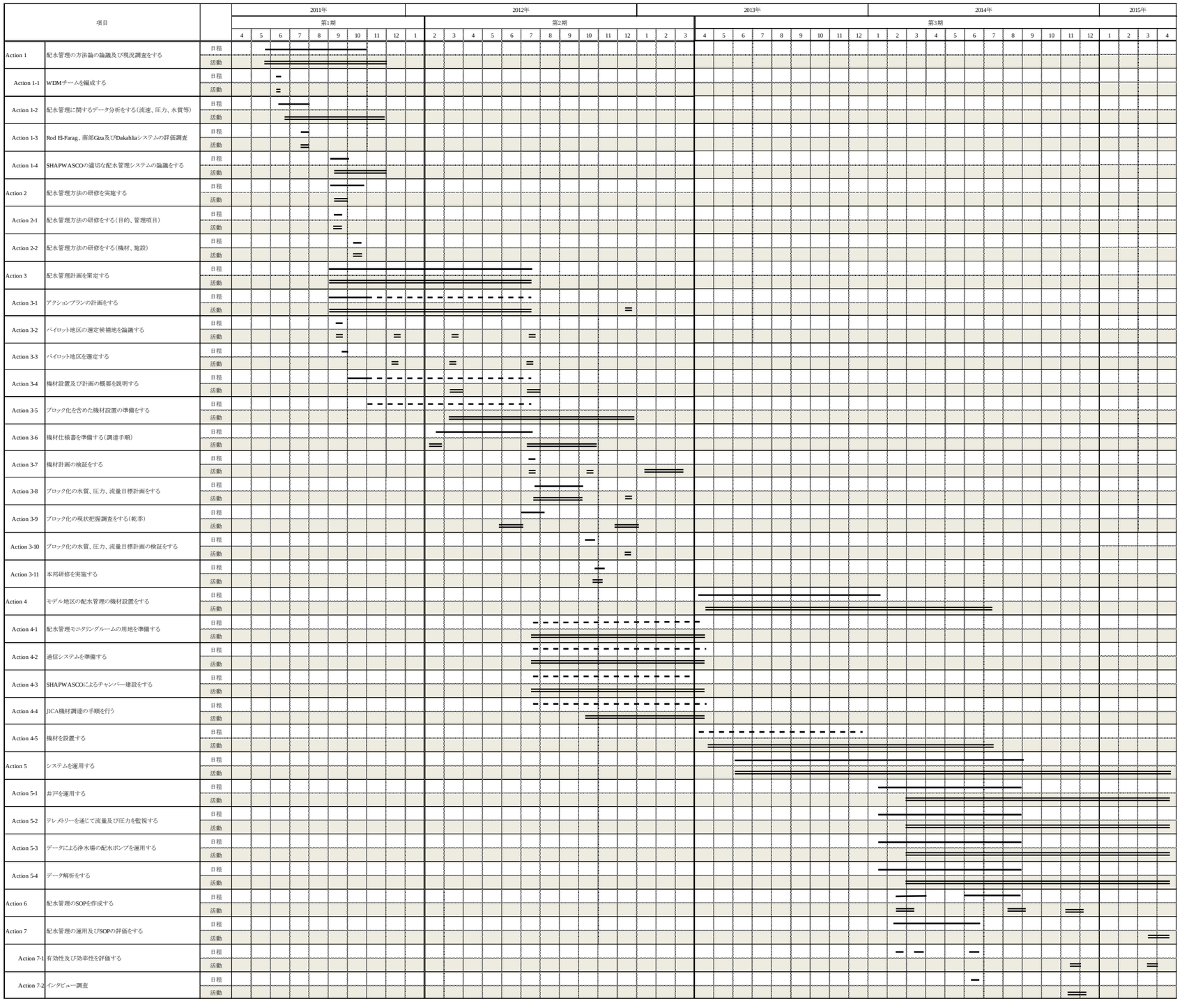


注：ベースは PO3 である。

図 5-2　NRW 削減活動の実施計画及び工程実績

5.3 WDM 活動における工程実績

実施計画（PO3：2013 年 10 月）と比較した WDM 活動の工程実績は、図 5-3 に示すとおりである。



注：ベースは PO3 である。

図 5-3　WDM 活動の実施計画及び工程実績

第 6 章　投入実績

6.1　日本側投入

6.1.1 JICA 専門家派遣実績

JICA 専門家派遣実績は、表 6-1 から 6-4 に示すとおりである。

表 6-1　派遣実績（第 1 期：2011 年 4 月～2012 年 1 月）

	担当	氏名	所属	2011年 第1期 4	5	6	7	8	9	10	11	12	2012年 1	合計（人/月） 現地	日本
現地業務/国内業務	◎ 総括/上水道計画	藤　井　克　巳	YEC		(5) 9 15 (41) 14 23				(29) 3 1					2.33	0.17
	◎ 副総括/無収水削減計画	大　森　光　仁	YEC			(30) 3 2			(60) 3 1			(16) 11 26		3.53	0.00
	漏水探知技術	新　村　宏　樹	YEC（補強）						(65) 5 8					2.17	0.00
	浄水システム	清　水　智　裕	YEC		(4) 10 13 (30) 14 12					(45) 2 15				2.50	0.13
	機械設備	長　尾　亮　治	YEC（補強）			(45) 3 17					(40) 23 1			2.83	0.00
	電機設備	サイエッド・オスマン・マドゥブリ	YEC（補強）				(30) 1 30		(10) 5 14 (4) 26 29 (9) 16 24	(3) 3 5 (1) 8 (1) 26 19	(2) 27			2.00	0.00
	管網解析	山　田　賢　二	YEC						(60) 3 1					2.00	0.00
	◎ 配水管理(1)	武　内　正　博	YEC		(5) 9 15 (15) 14 28				(22) 3 24			(30) 19 18		2.23	0.17
	◎ 配水管理(2)	木　山　清	YEC（補強）			(39) 27 4			(66) 3 7	8	(15) 22			3.50	0.50
	井戸モニタリング	飯　島　信　幸	YEC			(46) 20 4					13	(44) 26		3.00	0.00
	水質管理	梅　木　知　裕	YEC							(29) 7 31	4 8 (22) 29	(6) 7 12		1.90	0.00
	業務調整/無収水削減計画補助	加　藤　篤　志	YEC		(30) 14 12									1.00	0.00
														28.99	0.97
				① I/CR								② P/R1		合計	
報告書														29.96	

■：現地作業　　□：国内作業

①：インセプションレポート （IC/R） ②：プロジェクト事業進捗報告書 （P/R1）

出典:JICA 専門家

表 6-2　派遣実績（第 2 期：2012 年 2 月～2013 年 3 月）

	担当	氏名	所属	2012年 第2期 2	3	4	5	6	7	8	9	10	11	12	2013年 1	2	3	合計（人/月） 現地	日本
現地業務/国内業務	◎ 総括/上水道計画	藤　井　克　巳	YEC	21	(43) 3				(30) 25 24			8	(55)	1	15	(45) 28		5.77	0.00
	◎ 副総括/無収水削減計画	大　森　光　仁	YEC		16 (66)	20			(30) 2 31		(30) 26 24		27	(69)	3			6.50	0.00
	漏水探知技術	新　村　宏　樹	YEC（補強）	10	(50) 30						26	(110)		13	15	(45) 28		6.83	0.00
	浄水システム	清　水　智　裕	YEC		16 (50)	4			25 (30) 24		11 (30)	10			15	(45) 28		5.17	0.00
	機械設備	長　尾　亮　治	YEC（補強）	14	(46) 30							2	(59) 29					3.50	0.00
	電機設備	サイエッド・オスマン・マドゥブリ	YEC（補強）	12 (20) 2				2 (10) 11	28 (20) 17			27 (15) 11			17	(25) 10		3.00	0.00
	管網解析	山　田　賢　二	YEC										14	(90)		11		3.00	0.00
	◎ 配水管理（1）	武　内　正　博	YEC										5 (38)	12				1.27	0.00
	◎ 配水管理（2）	木　山　清	YEC（補強）	10 (30) 10	16 (30)	14						18 (30)	17			30 (20)	18	2.67	1.00
	井戸モニタリング	飯　島　信　幸	YEC										14	(45) 28				1.50	0.00
	水質管理	梅　木　知　裕	YEC		29 (30)	27								4 (45)	17			2.50	0.00
	業務調整/無収水削減計画補助	加　藤　篤　志	YEC										4 (40)	13	30	(30) 28		2.33	0.00
																		44.04	1.00
																③ P/R2		合計	
報告書																		45.04	

■：現地作業　　□：国内作業

③：プロジェクト事業進捗報告書 （P/R2）

出典:JICA 専門家

表 6-3　派遣実績（第 3 期：2013 年 4 月～2015 年 4 月）（1/2）

		担当	氏名	所属	2013年 第3期 4	5	6	7	8	9	10	11	12	2014年 1	2	3	4	5
現地業務 /国内業務	◎	総括/上水道計画	藤　井　克　巳	YEC		(30) 24 22					(20) 20 8				(45) 28 13			
	◎	副総括/無収水削減計画	大　森　光　仁	YEC		(45) 24 7						(15) 15 29			(30) 7 8			
		漏水探知技術	新　村　宏　樹	YEC（補強）		6	(60) 4											
		浄水システム	清　水　智　裕	YEC		(60) 16	14								(30) 12 13			
		機械設備	長　尾　亮　治	YEC（補強）														
		電機設備	サイエッド・オスマン・マドゥブリ	YEC（補強）														
		管網解析	山　田　賢　二	YEC			(28) 1 28	(1.4) 1 2										
	◎	配水管理（1）	武　内　正　博	YEC														
	◎	配水管理（2）	木　山　清	YEC（補強）		(50) (16)	(4)									(20) 9 28		
		井戸モニタリング	飯　島　信　幸	YEC			(28) 1 28	(1.4) 1 2										
		水質管理	梅　木　知　裕	YEC													(30) 1 30	
		業務調整/無収水削減計画補助	加　藤　篤　志	YEC											(35) 7 13			
報告書																		

■■■■：現地作業　　□：国内作業

④：プロジェクト事業進捗報告書 (P/R3)、⑤：プロジェクト業務完了報告書

出典:JICA 専門家

表 6-4　派遣実績（第 3 期：2013 年 4 月～2015 年 4 月）（2/2）

		担当	氏名	所属	2014年 第3期 6	7	8	9	10	11	12	2015年 1	2	3	4	合計（人/月） 現地	日本
現地業務/国内業務	◎	総括/上水道計画	藤　井　克　巳	YEC			(20) 14 2			(30) 17 16			(13) 8 20	(27) 13	(8) 8 9 17	6.17	0.40
	◎	副総括/無収水削減計画	大　森　光　仁	YEC			(19) 4 22							(5) 25 31	(13) 1 13 (3) 14 16	4.23	0.15
		漏水探知技術	新　村　宏　樹	YEC（補強）									(13) 23 7			2.43	0.00
		浄水システム	清　水　智　裕	YEC			(15) 5 19							(15) 17 31	(5) 1 5	4.00	0.25
		機械設備	長　尾　亮　治	YEC（補強）												0.00	0.00
		電機設備	サイエッド・オスマン・マドゥブリ	YEC（補強）												0.00	0.00
		管網解析	山　田　賢　二	YEC												0.93	0.07
	◎	配水管理（1）	武　内　正　博	YEC												0.00	0.00
	◎	配水管理（2）	木　山　清	YEC（補強）												2.33	0.00
		井戸モニタリング	飯　島　信　幸	YEC												0.93	0.07
		水質管理	梅　木　知　裕	YEC												1.00	0.00
		業務調整/無収水削減計画補助	加　藤　篤　志	YEC			(30) 4 2						(45) 23 8			3.67	0.00
																25.69	0.94
							④ P/R3								⑤ F/R	合計	
報告書																26.63	

■：現地作業

④：プロジェクト事業進捗報告書 (P/R3)、⑤：プロジェクト業務完了報告書

出典:JICA 専門家

6.1.2 本邦研修員受入実績

(1) 本邦研修の参加者

本邦研修に参加した C/P メンバーは、表 6-5 に示すとおりである.

表 6-5 カウンターパート本邦研修一覧

研修員氏名	配置されている分野	受入期間	研修コース名	研修内容及び受入機関	受入当時の役職
Dr. Salah Bayoumi	Project Manager	2011/10/3 ～ 2011/10/12	本邦研修「マネジメント研修」	研修内容： 日本の上水道政策管理及び実例の習得 受入機関： 厚生労働省、東京都水道局、横浜市水道局、公益社団法人日本水道協会、八千代エンジニヤリング株式会社	HCWW プロジェクト・セクター長
Mr. Ahmed Abdeen	Project Co-Manager	2011/10/3 ～ 2011/10/12	本邦研修「マネジメント研修」	研修内容： 日本の上水道政策管理及び実例の習得 受入機関： 厚生労働省、東京都水道局、横浜市水道局、公益社団法人日本水道協会、八千代エンジニヤリング株式会社	SHAPWASCO 総裁
Mr. Ayman Abd El Kader	Project Co-Manager	2011/10/3 ～ 2011/10/12	本邦研修「マネジメント研修」	研修内容： 日本の上水道政策管理及び実例の習得 受入機関： 厚生労働省、東京都水道局、横浜市水道局、公益社団法人日本水道協会、八千代エンジニヤリング株式会社	GHAPWASCO 総裁
Mr. Mohamed Abu El Khair	Project Co-Manager	2011/10/3 ～ 2011/10/12	本邦研修「マネジメント研修」	研修内容： 日本の上水道政策管理及び実例の習得 受入機関： 厚生労働省、東京都水道局、横浜市水道局、公益社団法人日本水道協会、八千代エンジニヤリング株式会社	MCWW 総裁
Mr. Wesam Abd El-Fattah	HCWW SOP	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 浄水施設運転管理技術の習得 受入機関：横浜市水道局、さいたま市水道局	HCWW 運転・保守総括部
Mr. Nagi Yousri	GHAPWASCO SOP	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 浄水施設運転管理技術の習得 受入機関：横浜市水道局、さいたま市水道局	GHAPWASCO 技術支援部
Mr. Ahmed Elsayed Rabie	GHAPWASCO NRW	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 無収水削減・漏水調査の方法/技術の習得 受入機関：横浜市水道局、フジテコム株式会社	GHAPWASCO 上水道施設運転・保守部
Mr. Mohamed Fathy Gaber	MCWW SOP	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 浄水施設運転管理技術の習得 受入機関：横浜市水道局、さいたま市水道局	MCWW 運転・保守局、浄水施設部
Mr. Mohamed Mostafa El Shafie	MCWW NRW	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 無収水削減・漏水調査の方法/技術の習得 受入機関：横浜市水道局、フジテコム株式会社	MCWW 運転・保守局、管網部
Mr. Ahmed Saeed	SHAPWASCO SOP	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 浄水施設運転管理技術の習得 受入機関：横浜市水道局、さいたま市水道局	SHAPWASCO SOP 部
Mr. Saeed Mohamed Attia	SHAPWASCO NRW	2011/12/5 ～ 2011/12/15	本邦研修「SOP・NRW 研修」	研修内容： 無収水削減・漏水調査の方法/技術の習得 受入機関：横浜市水道局、フジテコム株式会社	SHAPWASCO 無収水対策部
Mr. Ahmed Maher El sayed Bhnsawy	SHAPWASCO WDM	2012/10/29 ～ 2012/11/8	本邦研修「WDM 研修」	研修内容： 配水管理方法の理解/技術の習得 受入機関：横浜市水道局、さいたま市水道局、横河電機株式会社	SHAPWASCO 配水管理チーム
Mr. Mohamed Atef Abdelhamid Ali	SHAPWASCO WDM	2012/10/29 ～ 2012/11/8	本邦研修「WDM 研修」	研修内容： 配水管理方法の理解/技術の習得 受入機関：横浜市水道局、さいたま市水道局、横河電機株式会社	SHAPWASCO 配水管理チーム
Mr. Abd Elreheem Mohamed Abd	SHAPWASCO WDM	2012/10/29 ～	本邦研修「WDM 研修」	研修内容： 配水管理方法の理解/技術の習得	SHAPWASCO 配水管

研修員氏名	配置されている分野	受入期間	研修コース名	研修内容及び受入機関	受入当時の役職
Elreheem		2012/11/8		受入機関：横浜市水道局、さいたま市水道局、横河電機株式会社	理チーム
Mr. Moustafa Ibrahim Attia El Sayed	SHAPWASCO WDM	2012/10/29 ～ 2012/11/8	本邦研修「WDM 研修」	研修内容： 配水管理方法の理解/技術の習得 受入機関：横浜市水道局、さいたま市水道局、横河電機株式会社	SHAPWASCO 配水管理チーム

出典:JICA 専門家

(2) マネジメント本邦研修：2011 年 10 月 3 日～12 日（第 1 期）

1) 目的

日本の上水道政策管理、事業者間連携、上水道事業者の運営維持管理方法の実例を学ぶことにより、エジプト側上下水道公社のマネジメント能力を向上させることを目的とする。

2) 研修工程

この本邦研修は、2011 年 10 月 3 日から 12 日まで実施された。マネジメント本邦研修の研修生は、C/P と JICA 専門家チーム内で検討及び調整を行い、HCWW プロジェクト・セクター長と 3 公社の総裁とした。日程は表 6-6 に示すとおりである。

表 6-6 マネジメント本邦研修日程（第 1 期：2011 年 10 月 3 日～12 日）

日付		午前午後	研修項目	研修場所
2011 年 10 月 3 日	月	午前	滞在ガイダンス	JICA 東京
		午後	JICA 表敬、オリエンテーション	JICA 本部
2011 年 10 月 4 日	火	午前	IWA-ASPIRE ワークショップ「東京の水道事業の足跡と今後の国際展開」	東京国際フォーラム
		午後		
2011 年 10 月 5 日	水	午前	講義：「日本の上水道施策・事業管理システム」	厚生労働省
		午後	講義：「日本水道協会の事業概要と日本国内における役割」	（社）日本水道協会
2011 年 10 月 6 日	木	午前	講義：「水道事業者のサービス向上」 講義：「人的資源開発ための方策」	横浜市水道局
		午後	講義：「水道事業者間協力の現状および技術教育や保守操作能力向上」	横浜市水道局
2011 年 10 月 7 日	金	午後	講義：「無収水の現状および無収水削減に係る取り組み・施策」 講義：「効率性向上のための施策」	横浜市水道局
2011 年 10 月 10 日	月	午前	視察：「横浜水道の歴史および広報手法一例」	水道記念館
		午後	視察：「水資源管理および広報手法一例」	水とエネルギー館および宮が瀬ダム関連施設
2011 年 10 月 11 日	火	午前	視察「浄水場内の太陽光発電施設」	西谷浄水場
		午後	講義・視察「浄水場の管理および標準運転手順書と現場の改善活動」	川井浄水場
2011 年 10 月 12 日	水	午前	終了式	JICA 本部

出典:JICA 専門家

3) 研修成果

C/P 本邦研修は 8 日間である。研修生は以下のコースで、上水道事業経営に関する知識を習得した。

- 世界の水管理の開発と現状
- 水道事業サービスの技術移転

- O&M 技術教育の事業者間連携
- 無収水削減の実践及び政策
- 日本の浄水場管理及び SOP 現場の改善活動

(2) SOP・NRW 本邦研修：2011 年 12 月 5 日～15 日（第 1 期）

1) 目的

日本の NRW 削減や給水施設の運営維持管理の状況及び実務を理解し、エジプトでの活動に利用することを目的にする。

2) 研修工程

この本邦研修は、2011 年 12 月 5 日から 12 月 15 日まで実施された。SOP・NRW 本邦研修の研修生は、C/P と JICA 専門家チーム内で検討及び調整を行い、HCWW 本部、SOP 本部チーム、NRW 本部チームから選抜した。日程は表 6-7、6-8 に示すとおりである。

表 6-7 SOP 本邦研修日程（第 1 期：2011 年 12 月 5 日～15 日）

日付		午前 午後	研修項目	研修場所
2011 年 12 月 5 日	月	午前	ブリーフィング	東京国際センター
		午後	プログラムオリエンテーション	
2011 年 12 月 6 日	火	午前	講義：横浜水道概要	JICA 横浜
		午後	講義：震災及び事故時の危機管理対応	JICA 横浜
			講義：住民啓発の手法概論（ツール及び情報公開内容の紹介、住民啓発方法と情報公開の変遷）	
2011 年 12 月 7 日	水	午前	講義：水運用や施設運転効率の概要（総合監視システム概要）	西谷浄水場 管理棟
		午後	講義：路上計測設備による配水管網の管理・配水管端末説明	西谷浄水場 管理棟
			視察：路上計測設備	
2011 年 12 月 8 日	木	午前	講義：西谷浄水場概要	西谷浄水場 管理棟 2
		午後	講義：浄水場運転維持管理の体制（浄水場の概要および管理体制）	西谷浄水場 管理棟
			視察：浄水場運転管理状況	
2011 年 12 月 9 日	金	午前	講義：浄水場運転管理マニュアルの紹介と運転維持データの管理方法	西谷浄水場 管理棟
		午後	講義：運転維持管理の標準手順書紹介（各運転維持管理標準手順書の事例紹介）	西谷浄水場 管理棟
2011 年 12 月 12 日	月	午前	講義：さいたま水道の概要	さいたま市水道局
		午後	講義：井戸の更新計画	さいたま市水道局
2011 年 12 月 13 日	火	午前	講義：電気設備（井戸）の更新・水道用地の有効利用及び小水力発電・水質モニター	さいたま市水道局
		午後	視察：水道用地の有効利用&小水力発電・水質モニター	大宮配水場
2011 年 12 月 14 日	水	午前	講義：水運用（配水管理）・井戸の運転、保守、管理	東部配水場
		午後	視察：東部配水場内視察・地下水浄水場施設視察	南下新井配水場、東浦和浄水場
2011 年 12 月 15 日	木	午前	評価会/修了証書授与	東京国際センター

出典:JICA 専門家

表 6-8 NRW 本邦研修日程（第 1 期：2011 年 12 月 5 日～15 日）

日付		午前 午後	研修項目	研修場所
2011 年 12 月 5 日	月	午前	ブリーフィング	東京国際センター
		午後	プログラムオリエンテーション	
2011 年 12 月 6 日	火	午前	講義：横浜水道概要	JICA 横浜
		午後	講義：震災及び事故時の危機管理対応	JICA 横浜
			講義：住民啓発の手法概論（ツール及び情報公開内容の紹介、住民啓	

日付		午前 午後	研修項目	研修場所
			発方法と情報公開の変遷）	
2011 年 12 月 7 日	水	午前	講義：顧客管理、顧客サービス、メーター検針、料金徴収方法、未納対策	西谷浄水場 管理棟
		午後	講義：路上計測設備による配水管網の管理・配水管端末説明	西谷浄水場 管理棟
			視察：路上計測設備	
2011 年 12 月 8 日	木	午前	講義：無収水の一般状況（無収水対策の取り組み、無収水率・漏水率改善方法）	西谷分庁舎
		午後	講義：漏水点検及び管路修理体制（チーム及び要員数、直営及び外部委託状況、保有機器等）	西谷分庁舎
			意見交換：無収水対策	
2011 年 12 月 9 日	金	午前	講義：配水ブロック管理及び経年管更新計画	西谷分庁舎 1
		午後	講義：管路情報の管理	西谷分庁舎
2011 年 12 月 12 日	月	午前	講義：漏水の仕組み（漏水発生のメカニズム）、漏水音および探知方法（周波数特性、漏水音の特徴、漏水音の例、漏水探知機器類の原理説明）	フジテコム株式会社
		午後	実習：漏水探知実習-1（音調棒、デジタル音調棒による漏水探知の実習） 実習：漏水探知実習-2（漏水探知機器、ノイズ漏水探知機器による漏水探知の実習）	フジテコム株式会社
2011 年 12 月 13 日	火	午前	講義：相関式漏水探知器、ロガ型相関式漏水探知器の原理・仕組み	フジテコム株式会社
		午後	実習：漏水探知実習-3（相関式漏水探知器を使って漏水位置の特定の実習） 実習：漏水探知実習-4（ロガ型相関式漏水探知器を使って漏水位置の特定の実習）	フジテコム株式会社
2011 年 12 月 14 日	水	午前	講義：金属探知器、鉄管探知器、超音波流量計の原理、仕組み、漏水探知訓練用施設と機材	フジテコム株式会社
		午後	実習：漏水探知実習-5（金属探知器、鉄管探知器を使った管路探知実習、超音波流量計を使った調査工法） 講義：漏水探知訓練の方法や教えるときの要点、漏水探知技術を向上させるための方策	フジテコム株式会社
2011 年 12 月 15 日	木	午前	評価会/修了証書授与	東京国際センター

出典:JICA 専門家

3) 研修成果

研修生は、SOP 活動と NRW 削減活動に係る以下の技術を、横浜市水道局、さいたま市水道局、フジテコム株式会社で習得した。

- 上水道運営管理のための SOP 活用
- 施設運転の安全及び効率的な管理
- 水道料金及び料金徴収システム
- 配水監視システム
- 無収水対策の実施体制
- 無収水削減の技術（漏水調査、漏水探知機器の操作、漏水修理作業等）

(3) WDM 本邦研修：2012 年 10 月 29 日～11 月 8 日（第 2 期）

1) 目的

日本における上水道の配水監視システムの内容や技術を習得し、エジプトでの展開の参考にすることを目的にする。

2) 研修工程

この本邦研修は、2012 年 10 月 29 日から 11 月 9 日まで実施された。WDM 本邦研修の研修生は、C/P と JICA 専門家チーム内で検討及び調整を行い、WDM 本部チームから選抜した。日程は表 6-9

に示すとおりである。

表 6-9　WDM 本邦研修日程（第 2 期：2012 年 10 月 29 日～11 月 8 日）

日付		午前 午後	研修内容	研修場所
2012 年 10 月 29 日	月	午前	講義：ブリーフィング	JICA 横浜
		午後	講義：プログラムオリエンテーション （JICA、八千代 E、横浜市水道局の関係性の説明）	JICA 横浜
			講義：プログラムオリエンテーション（研修日程説明）	JICA 横浜
2012 年 10 月 30 日	火	午前	講義：横浜水道の概要	JICA 横浜
		午後	講義：水道施設の設備管理（水道設備維持管理概要）1	JICA 横浜
2012 年 10 月 31 日	水	午前	講義：水道施設の設備管理（水道設備維持管理概要）2	JICA 横浜
		午後	講義：水道施設図面管理	横浜市水道局西谷分庁舎 1F
2012 年 11 月 1 日	木	午前	講義：西谷浄水場構内機械設備概要	西谷浄水場管理棟 2F
			見学：西谷浄水場内の視察	西谷浄水場
		午後	講義：西谷浄水場構内電気設備概要	西谷浄水場管理棟 2F
			講義：西谷浄水場の概要	西谷浄水場管理棟 2F
			講義：水道施設の機械･電気設備保全業務	西谷浄水場管理棟 2F
2012 年 11 月 2 日	金	午前	講義：水道施設における電気設備保全業務の実際 1 -職員による日常巡視点	西谷浄水場管理棟 2F
			講義：水道施設における電気設備保全業務の実際 2 -仏向ポンプ場の日常点検	西谷浄水場管理棟 2F
			講義：水道施設における電気設備保全業務の実際 3 -仏向ポンプ場の日常点検	西谷浄水場管理棟 2F
		午後	講義：水道施設における電気設備保全業務の実際 4 -西谷ポンプ場の日常点検	西谷浄水場管理棟 2F
			実習：水道施設における電気設備保全業務の実際 5 -仏向ポンプ場の点検実習	西谷浄水場
2012 年 11 月 5 日	月	午前	講義：運用計画と管理･総合監視システム	西谷浄水場管理棟 2F
		午後	実習：水運用実習（総合監視システム視察）	西谷浄水場管理棟 2F
			講義：路上計測設備の概要	西谷浄水場管理棟 2F
			見学：路上計測設備の視察	西谷浄水場管理棟 2F
2012 年 11 月 6 日	火	午前	講義：水運用（配水管理）、井戸の運転・保守・管理	東部配水場
		午後	見学：東部配水場、地下水浄水施設、東浦和浄水場	東部配水場
2012 年 11 月 7 日	水	午前	講義：研修概要、横河電機の紹介	横河電機（株）本社
			講義：SCADA システムについて 1	横河電機（株）本社
		午後	講義：SCADA システムについて 2	横河電機（株）本社
			講義：漏水管理について、質問・討議	横河電機（株）本社
			見学：グローバルレスポンスセンター	横河電機（株）本社
			見学：デモルーム	横河電機（株）本社
2012 年 11 月 8 日	木	午前	成果発表	JICA 横浜
			評価会/終了証書授与	JICA 横浜

出典:JICA 専門家

3)　研修結果

4 名の研修生は、WDM 活動に係る以下の技術を、さいたま市水道局、横浜市水道局、横河電機株式会社で習得した。

- 配水管理・監視システムとその運用
- 水道施設の運転管理方法
- 井戸の運転管理・配水管理
- 日本における SCADA システムと運用方法

6.1.3 ヨルダン水道庁とエジプト上下水道公社の情報交換

(1) 目的と経緯

ヨルダン国において、JICA 及びヨルダン水道庁（WAJ）は、2005 年から 2011 年に NRW 削減における技術協力プロジェクトを実施した。ヨルダンでの NRW 削減プロジェクトは、給水管接続（各戸接続）の技術訓練や配水管圧力低減が含まれ、本プロジェクトと異なるアプローチで実施されている。エジプト側とヨルダン側の両方の経験は、お互いに参考となり、特に WAJ のために開発された給水管接続の請負業者認定制度は、エジプト上下水道公社全体にとっても有益であると予想された。そのため、JICA 専門家が、WAJ の現場視察や WAJ と HCWW の情報交換を提案し、JICA 及び WAJ が了解した。

(2) 情報交換の内容

情報交換の内容は下記のとおりである。

- 両国の水供給システムの現状と課題
- JICA 技術協力プロジェクト活動とその成果の紹介、及び JICA プロジェクトで得た技術の活用方法
- 給水管接続の請負業者認定制度、及びその研修制度を含めた WAJ の取り組み現場の視察
- PPP を含む事業実施体制と浄水場や上水道関連施設の視察
- 国レベル・県レベル・事業者トップマネジメント等の各段階での事業マネジメントに係る意見交換

情報交換を通じ、HCWW はエジプトでの給水管接続の請負業者認定制度の導入に興味を持った。ヨルダン側でも新たな試みとして SOP の導入を検討している。

(3) ヨルダン側の参加者及び日程

情報交換の日程は表 6-10 に示すとおりである。

表 6-10 ヨルダン水道庁とエジプト上下水道公社との情報交換

日付		活動内容
2012年10月14日	日	• 10:00: カイロ発、13:15:アンマン着 • 16:00-17:00: JICAヨルダン事務所表敬訪問及び日程確認
2012年10月15日	月	WAJの研修センター視察 • 09:00-13:00: 給水管接続のプレゼン • 13:30-14:30: 水道メーター作業場視察
2012年10月16日	火	10:00-10:30: WAJ表敬訪問 13:30-15:00:情報交換及び活動のプレゼン • Eng.Waleed SukkarによるヨルダンでのJICAプロジェクトの発表 • Eng. Malek Roushdehによる各戸接続工事の免許制度の発表 • Dr. Salah BayoumiによるエジプトでのJICAプロジェクトの発表 • 意見交換
2012年10月17日	水	現場視察. • 9:30-11:30: Zai浄水場 • 12:00-14:00: Fuheisパイロットプロジェクト 14:15-15:45: JICAヨルダン事務所報告 16:00-16:30: Arab Countries Water Utilities Association表敬
2012年10月18日	木	• 17:30: アンマン発, 18:00:カイロ着

出典:JICA 専門家

情報交換の参加者は、表 6-11 に示すとおりである。

表 6-11　ヨルダン水道庁とエジプト上下水道公社との情報交換の参加者

氏名	所属	部所
JICA ヨルダン事務所		
後藤　信二	JICA ヨルダン事務所	次長
高田　健二	JICA ヨルダン事務所	所員
Mr. Hani H. Al-Kurudi	JICA ヨルダン事務所	プログラムオフィサー
ヨルダン側		
Mr. Waleed A. Sukkar	水灌漑省	水灌漑大臣アドバイザー
Mr. Malek Roushdeh	ヨルダン水道庁	事務局長補佐
Mr. Mohamed Al Awameieh	ヨルダン水道庁	事務局長　アドバイザー
Ms. Hanan Khouri	ヨルダン水道庁	研修課長
Mr. Firas Zriqat	ヨルダン水道庁	研修センタートレーナー
Mr. Mousa	ヨルダン水道庁	水道メーター・エンジニア
Mr. Haitham Al-Kilani	Miyahuna ヨルダン水企業	品質課長 （Zai 浄水場課長）
エジプト側		
Dr. Salah Bayoumi	HCWW	プロジェクト・セクター長
Mr. Shaker　Abdel-Fattah	SHAPWASCO	プロジェクト・技術サポートセクター長
Mr. Adel Attia	GHAPWASCO	運転維持管理セクター長
Mr. Ayman　Bassyouny Abdeen	MCWW	運転維持管理セクター長
藤井　克巳	JICA 専門家	総括/上水道計画
Mr. Mohamed Nagi Gaber	JICA 専門家	ファシリテーター

出典:JICA 専門家

6.1.4 供与機材実績

(1)　機材

NRW は、営業的損失と物理的損失に分けられ、物理的損失のほとんどは、給配水設備の漏水である。そのため、漏水は、NRW 率を左右する主要な要素である。本プロジェクトでは、その漏水を発見するための機材を導入した。

SOP 活動を実施するためには、モデル施設の要所で流量や水位の計測が必要である。そのため、モデル施設に必要な水位計及び超音波流量計を導入した。

SHAPWASCO のパイロット地区では、水圧や流量の遠隔・連続監視を必要とする。そのため、遠隔で配水状況を監視するために必要な機材を導入した。

2011 年 4 月から 2015 年 4 月（第 1 期から第 3 期）における機材調達は、表 6-12 に示すとおり行われた。

表 6-12　SOP 活動・NRW 削減活動・WDM 活動のための機材調達

No.	項　目	数量			購入者		購入先	購入時期
		SHAP	GHAP	MCWW	JET	JICA		
1	漏水探知器	-	3	3	✓		日本	2011 年 10 月 20 日
2	電子音聴棒	-	2	2	✓		日本	2011 年 10 月 20 日
3	音聴棒	-	4	4	✓		日本	2011 年 10 月 20 日
4	デジタル水圧計	-	3	3	✓		日本	2011 年 10 月 20 日
5	埋設管探知器	-	2	2	✓		日本	2011 年 10 月 20 日
6	金属探知器	-	1	1	✓		日本	2011 年 10 月 20 日

No.	項　目	数量			購入者		購入先	購入時期
		SHAP	GHAP	MCWW	JET	JICA		
7	金属探知器（マグネチック式）	-	1	1	✓		日本	2011 年 10 月 20 日
8	振動発生装置	-	2	2	✓		日本	2011 年 10 月 20 日
9	ハンマードリル	-	2	2	✓		日本	2011 年 10 月 20 日
10	ドリルビット	-	8	8	✓		日本	2011 年 10 月 20 日
11	ボーリングバー	-	2	2	✓		日本	2011 年 10 月 20 日
12	井戸水位計	-	2	2	✓		日本	2011 年 12 月 19 日
13	発電機	-	2	2	✓		エジプト	2011 年 10 月 20 日
14	相関式漏水探知機	-	1	1		✓	日本	2012 年 2 月 21 日
15	超音波式流量計（ポータブル、大口径）	-	3	3		✓	日本	2012 年 2 月 21 日
16	超音波式流量計（ポータブル、標準口径）	-	2	2		✓	日本	2012 年 2 月 21 日
17	ピックアップ	-	1	1		✓	エジプト	2012 年 7 月 26 日
18	コピー及びファクス機	-	1	1		✓	エジプト	2012 年 7 月 26 日
19	デスクトップ型パソコン	-	1	1		✓	エジプト	2012 年 7 月 26 日
20	ノートブック型パソコン	-	2	2		✓	エジプト	2012 年 7 月 26 日
21	管網水理解析ソフト	-	1	1		✓	エジプト	2012 年 3 月 22 日
22	定置形超音波流量計（SOP 用）	-	1	1	✓		日本	2012 年 7 月 2 日
23	定置形超音波流量計（地下設置小型センサタイプ）	6	-	-		✓	日本	2013 年 5 月 4 日
24	定置形超音波流量計（地下設置大型センサタイプ）	1	-	-		✓	日本	2013 年 5 月 4 日
25	定置形超音波流量計（屋内設置小型センサタイプ）	7	-	-		✓	日本	2013 年 5 月 4 日
26	水圧測定装置（浄水場設置有線接続タイプ）	2	-	-		✓	日本	2013 年 5 月 4 日
27	水圧測定装置（屋内設置テレメーター接続タイプ）	10	-	-		✓	日本	2013 年 5 月 4 日
28	現場テレメーターシステム（屋外設置タイプ）	17	-	-		✓	日本	2013 年 5 月 4 日
29	現場テレメーターシステム（屋内設置タイプ）	7	-	-		✓	日本	2013 年 5 月 4 日
30	中央監視システム	1	-	-		✓	日本	2013 年 5 月 4 日
31	漏水探知器	-	2	2	✓		日本	2013 年 6 月 26 日

注:SHAP:SHAPWASCO、GHAP:GHAPWASCO、JET:JICA 専門家チーム

1) 漏水探知器

漏水探知器は、路面から漏水箇所を探査するために使用された。2011 年 10 月（第 1 期）にて各公社の NRW チームへ各 3 セット供与された。

2) 電子音聴棒

電子音聴棒は、仕切弁や消火栓に伝わる微小漏水音を発見するために使用された。

3) 音聴棒

音聴棒は、配水管や仕切弁や消火栓に伝わる漏水音を発見するために使用された。

4) デジタル水圧計

デジタル水圧計は、継続的な圧力測定及びその測定値を記録するために使用された。

5) 埋設管探知器

埋設管探知器は、埋設された配管の位置と深さを調査するために使用された。

6) 金属探知器

金属探知器は、埋没したバルブボックスの位置を調査するために使用された。わかりやすい反応が得られるが、探査深度がやや浅い。

7) 金属探知器（マグネチック式）

金属探知器（マグネチック式）は、埋没したバルブボックス及びバルブの位置を調査するために使用された。対象物が深い場合に効果を発揮する。

8) 振動発生装置

振動発生装置は、給水管を中心とした非金属管の埋設位置を調査するために使用された。非金属の給水管に設置し、打撃音を発生させ、伝播させ、その音を路面上から調査する。

9) ハンマードリル

ハンマードリルは、アスファルトやコンクリート路面上に孔を開け、ボーリングバーや、音聴棒を埋設配管上の漏水地点付近に挿入し、漏水確認調査をする穿孔作業に使用された。

10) ドリルビット

ドリルビットは、漏水確認調査とよばれる穿孔作業に用いるハンマードリルの「刃」である。アスファルト、コンクリートの路面上にも孔を開けることができるが、刃先は数カ月に一度交換が必要である。

11) ボーリングバー

ボーリングバーは、漏水確認調査の一部としてハンマードリルで開けた孔に挿入し、棒芯部への漏水による「水」の付着を確認し、また音聴棒をさらに路面から挿入しやすくするために使用された。

12) 井戸水位計

井戸水位計は、地下水位を計測する井戸モニタリングに使用された。

13) 発電機

発電機は、漏水確認調査用のハンマードリルを使用するための電源として使用された。

14) 相関式漏水探知器

相関式漏水探知器は、路面から音が確認しにくい場合の漏水調査方法の一つとして使用された。センサー2 点間への漏水音の到達時間差から漏水点への距離を算出するが、現地の埋設管路状況により誤差が発生するケースもあり、相関式漏水探知器を使用し漏水点を絞り込んだ後、1)の漏水探知器で再度路面から音聴し、漏水確認調査を実施する。

15) 超音波流量計（ポータブル、大口径）

超音波流量計（大口径）は、パイロット地区内の流入点と流出点に設置し、パイロット地区内の流入量を計測するために使用された。地区内の消費水量と比較することにより、無収

水量が算定できる。

16) 超音波流量計（ポータブル、標準口径）

超音波流量計（標準口径）は、上記 15)と同様である。

17) 車両（ピックアップ）

車両（ピックアップ）は、SOP チームおよび NRW チームの調査現場への移動、現場への機材の搬入に使用された。

18) コピー及びファックス機

コピー及びファックス機は、プロジェクトに必要な書類を準備するために使用された。

19) デスクトップ型パソコン

デスクトップパソコンは、データベースの構築、および水理解析に使用された。

20) ノートブック型パソコン

ノートブック型パソコンは、流量・水圧データ解析、各種記録管理及び必要書類を準備するために使用された。

21) 管網水理解析ソフト（Water Cad）

管網水理解析ソフト（Water Cad）は、適切な管径と圧力を検討するための管網水理解析に使用された。

22) 設置型超音波流量計（SOP 活動用）

設置型超音波流量計は、SOP 活動の浄水量ならびに配水量データのモニタリングに使用された。

23) 定置形超音波流量計（地下設置小型センサタイプ）

定置型超音波流量計（地下設置小型センサタイプ）は、WDM 活動における配水管の水量モニタリングに使用された。

24) 定置形超音波流量計（地下設置大型センサタイプ）

定置型超音波流量計（地下設置大型センサタイプ）は、上記 24 と同様である。

25) 定置形超音波流量計（屋内設置小型センサタイプ）

定置型超音波流量計（屋内設置小型センサタイプ）は、WDM 活動の井戸の水量モニタリングに使用された。

26) 水圧測定装置（浄水場設置有線接続タイプ）

水圧測定装置（浄水場設置有線接続タイプ）は、WDM 活動の浄水場内の水圧モニタリングに使用された。

27) 水圧測定装置（屋内設置テレメーター接続タイプ）

水圧測定装置（屋内設置テレメーター接続タイプ）は、WDM 活動の配水管網の水圧モニタリングに使用された。

28) 現場テレメーターシステム（屋外設置タイプ）

現場テレメーターシステムは、配水管網近くに設置し、中央監視システムへ流量・水圧デ

ータを送信するために使用された。WDM 活動のモニタリングで使用された。

29) 現場テレメーターシステム（屋内設置タイプ）

上記 29)と同様であるが、屋内に設置するタイプである。

30) 中央監視システム

中央監視システムは、全ての WDM 用の流量計・水圧計のデータを受信し、スクリーンに配水状況を表示するとともに、PC 内にデータを登録・管理するものである。WDM 活動のモニタリングで使用された。

31) 漏水探知器

NRW 削減活動のさらなる普及をはかり、各支所での迅速な確認作業を促進するために、第 3 期にて上記 1)と同様の漏水探知器を調達し、各公社の NRW チームへ各 2 セットを追加供与した。

(2) 機材引渡し状況

機材引渡し状況は、表 6-13 に示すとおりである。

表 6-13 機材稼動状況

購入時期 （入手時期）	機材名	メーカー	設置場所
2011 年 10 月 20 日	漏水探知器	フジテコム	GHAPWASCO、MCWW
2011 年 10 月 20 日	電子音聴棒	フジテコム	GHAPWASCO、MCWW
2011 年 10 月 20 日	音聴棒	フジテコム	GHAPWASCO、MCWW
2011 年 10 月 20 日	デジタル水圧計	Ashridge	GHAPWASCO、MCWW
2011 年 10 月 20 日	埋設管探知器	フジテコム	GHAPWASCO、MCWW
2011 年 10 月 20 日	金属探知器	フジテコム	GHAPWASCO、MCWW
2011 年 10 月 20 日	金属探知器（マグネチック式）	フジテコム	GHAPWASCO、MCWW
2011 年 10 月 20 日	振動発生装置	TOKYO RHYTHM	GHAPWASCO、MCWW
2011 年 10 月 20 日	ハンマードリル	日立工機	GHAPWASCO、MCWW
2011 年 10 月 20 日	ドリルビット	YUNIKA	GHAPWASCO、MCWW
2011 年 10 月 20 日	ボーリングバー	フジテコム	GHAPWASCO、MCWW
2011 年 12 月 19 日	発電機	HONDA	GHAPWASCO、MCWW
2011 年 10 月 20 日	井戸水位計	CTI ｻｲｴﾝｽｼｽﾃﾑ	GHAPWASCO、MCWW
2012 年 2 月 21 日	相関式漏水探知器	フジテコム	GHAPWASCO、MCWW
2012 年 2 月 21 日	ポータブル超音波式流量計（ポータブル、大口径）	TOKYO KEIKI	GHAPWASCO、MCWW
2012 年 2 月 21 日	ポータブル超音波式流量計（ポータブル、標準口径）	TOKYO KEIKI	GHAPWASCO、MCWW
2012 年 7 月 26 日	ピックアップ	NISSAN	GHAPWASCO、MCWW
2012 年 7 月 26 日	デスクトップ型パソコン	HP	GHAPWASCO、MCWW
2012 年 7 月 26 日	ノートブック型パソコン	HP	GHAPWASCO、MCWW
2012 年 7 月 26 日	コピー及びファクス機	Xerox	GHAPWASCO、MCWW
2012 年 3 月 22 日	管網水理解析ソフト	Bently	GHAPWASCO、MCWW
2012 年 7 月 2 日	定置形超音波流量計（SOP 用）	Endress Hauser	GHAPWASCO、MCWW
2013 年 5 月 4 日	定置形超音波流量計 （地下設置小型センサタイプ）	TOKYO KEIKI	SHAPWASCO
2013 年 5 月 4 日	定置形超音波流量計 （地下設置大型センサタイプ）	TOKYO KEIKI	SHAPWASCO
2013 年 5 月 4 日	定置形超音波流量計 （屋内設置小型センサタイプ）	TOKYO KEIKI	SHAPWASCO
2013 年 5 月 4 日	水圧測定装置 （浄水場設置有線接続タイプ）	横河電機	SHAPWASCO

購入時期 （入手時期）	機材名	メーカー	設置場所
2013 年 5 月 4 日	水圧測定装置 （屋内設置テレメーター接続タイプ）	横河電機	SHAPWASCO
2013 年 5 月 4 日	現場テレメーターシステム （屋外設置タイプ）	横河電機	SHAPWASCO
2013 年 5 月 4 日	現場テレメーターシステム （屋内設置タイプ）	横河電機	SHAPWASCO
2013 年 5 月 4 日	中央監視室システム	横河電機	SHAPWASCO
2013 年 6 月 26 日	漏水探知器	フジテコム	GHAPWASCO、MCWW

出典:JICA 専門家

6.1.4 JICA 専門家の現地業務費実績

JICA 専門家の現地業務費実績は、表 6-14 に示すとおりである。

表 6-14　JICA 専門家の現地業務費実績

（単位： 円）

費目		第 1 期 （2011 年 4 月 ～2012 年 1 月） （精算金額） ①	第 2 期 （2012 年 2 月 ～2013 年 3 月） （精算金額） ②	第 3 期 （2013 年 4 月 ～2015 年 4 月） （契約金額） ③	合計 （①＋②+③）
1	一般業務費	9,728,000	21,677,813	40,433,000	71,838,979
1.1	傭人費	6,888,754	13,964,285	30,693,000	51,546,039
1.2	機材保守・管理費	0	0	117,000	117,000
1.3	消耗品費	145,311	583,554	294,000	1,022,865
1.4	旅費・交通費	0	0		0
1.5	通信・運搬費	69,640	116,862	143,000	329,502
1.6	資料等作成費	275,144	9,095	61,000	345,239
1.7	借料損料	2,349,317	7,004,017	9,125,000	18,478,334
1.8	光熱水料	0	0	0	0
1.9	人材養成確保費	0	0	0	0
1.10	施設・設備維持管理費	0	0	0	0
1.11	現地研修費	0	0	0	0
1.12	国内活動費	0	0	0	0
1.13	国内再委託費	0	0	0	0
1.14	雑費	0	0	0	0
2	供与機材購入費	11,689,000	1,296,000	1,992,000	14,977,000
3	供与機材輸送費	254,000	49,000	30,000	333,000
4	携行機材購入費	0	0	0	0
5	携行機材輸送費	0	0	25,000	25,000
6	その他の機材購入費	0	0	0	0
7	その他の機材輸送費	38,000	0	0	38,000
8	報告書作成費（印刷製本費）	11,000	11,000	1,286,000	1,308,000
9	報告書作成費（印刷製本を除く）	19,000	19,000	2,314,000	2,352,000
10	ローカルコンサルタント契約	666,000	0	1,054,000	1,720,000
11	ローカル NGO 契約	0	0	0	0
12	工事費	0	0	0	0
13	会議費	0	0	0	0
14	契約に含まれる保険料	0	0	0	0
15	契約に含まれる国別研修	1,837,000	896,000	0	2,733,000
合計		**24,242,000**	**23,948,000**	**47,134,000**	**95,324,000**

出典:JICA 専門家

6.2 エジプト側投入

6.2.1 エジプト国負担実績

エジプト国側の負担事項は、表 6-15 に示すとおりである。

表 6-15 エジプト国負担実績

（単位：エジプトポンド）

各公社	費目	数量	合計
SHAPWASCO			
WDM	WDM 機材の設置に必要な流量計チャンバーの建設	13	265,100.00
	中央監視棟の建設	1	950,000.00
	無線ルーター間の相互通信に必要なインターネット環境の整備	25	33,750.00
	電源供給に必要な機材の整備	1	4,500.00
	受電設備の設置（メーター及び電柱の設置）	1	5,000.00
	WDM 機材の設置に必要な工事機材の購入	1	5,000.00
	機材の輸送費用	1	2,000.00
合計			**1,265,350.00**
GHAPWASCO			
SOP	流量調節弁の調整	10	166,500.00
	流量調節弁付帯設備の調整（ろ過池水位計と PLC システムの調整）	10	140,000.00
	超音波流量計の較正	11	8,250.00
	塩素ボンベ計重器の購入	1	13,000.00
	ろ過池空洗流量計の購入	2	82,000.00
	表流水浄水場における流量計室の建設	1	17,000.00
	残留塩素濃度計の調整	1	23,000.00
	塩素ガス漏洩検知器の調整	1	14,000.00
	鉄・マンガン除去施設における塩素水注入用流量計の購入	2	3,000.00
	残留塩素濃度及びマンガン濃度測定用試薬の購入	2	2,000.00
	各モデル施設への PC 購入	2	11,000.00
	ろ過池洗浄ポンプ起動用真空ポンプの購入	1	22,000.00
	硫酸アルミニウム貯蔵槽液位計の設置	1	13,000.00
	Tanta 表流水浄水場向け超音波流量計の購入	4	96,000.00
NRW	NRW 機材の設置に必要な流量計チャンバーの建設	8	136,000.00
	音聴棒の購入	20	32,000.00
Other	事務所維持費、燃料費、ワークショップ開催費等雑費用	----	10,000.00
合計			**788,750.00**
MCWW			
SOP	**計装機器の較正**		
	Gezy 鉄・マンガン除去施設		
	電磁流量計	4	2,800.00
	超音波流量計	6	3,600.00
	pH 計	2	1,200.00
	濁度計	2	1,200.00
	残留塩素濃度計	1	700.00
	圧力スイッチ	2	1,200.00
	Mahalet El Sadat El Satheya 表流水浄水場		
	原水用超音波流量計	1	700.00
	浄水用超音波流量計	1	700.00
	ろ過処理水用超音波流量計	0.88	9,800.00
	超音波レベル計（検出器）	0.94	9,000.00
	超音波レベル計（変換器）	6	3,600.00

各公社	費目	数量	合計
	レベルモニタリングパネル	0.94	9,000.00
	原水槽用レベルスイッチ（取水場）	1	600.00
	原水用流量計（取水場）	1	700.00
	残留塩素濃度計	1	700.00
	塩素注入機	1	900.00
	機材購入及び設置作業		
	ろ過池逆洗用超音波流量計	1	54,595.00
	ろ過池空洗用流量計 8”（Mahalet El Sadat El Satheya 表流水浄水場）	2	79,780.00
	超音波レベル計	3	59,700.00
	塩素ボンベ計重器（自動計測）	3	51,000.00
	ろ過池空洗用流量計 2”（Gezy 鉄・マンガン除去施設）	1	41,000.00
	ろ過池空洗用流量計 3”（Gezy 鉄・マンガン除去施設）	1	41,500.00
	過マンガン酸カリウム用流量計（Gezy 鉄・マンガン除去施設）	1	4,100.00
	電磁流量計	1	27,500.00
	超音波流量計（Mahalet El Sadat El Satheya、Shebeen El Kom 及び Minouf 表流水浄水場浄水場）	3	66,600.00
	圧力計（Kom Akhdar 井戸施設）	2	1,000.00
	塩素注入配管更新	3	6,000.00
	点検歩廊、堰板製作（Gezy 鉄・マンガン除去施設）	1	1,000.00
	ろ過砂充填 5m^2（Gezy 鉄・マンガン除去施設）	5	1,800.00
	機材購入		
	圧力計（0 to -10 mws）	4	2,600.00
	塩素ボンベ計重器（手動計測）	2	26,400.00
	電磁流量計	1	27,500.00
	圧力計（1）	42	23,520.00
	圧力計（2）	30	18,300.00
	水中ポンプ（25L/s.-60 m head）	1	42,500.00
	過マンガン酸カリウム注入ポンプ	1	7,500.00
	硫酸アルミニウム注入ポンプ	3	180,000.00
	1/2” バルブ類	40	1,800.00
	塩素ボンベ計重器（手動計測、1ton）	1	2,550.00
	硫酸アルミニウム用ストレーナー	3	6,000.00
	運転記録印刷費	50	500.00
	P&ID、単線結線図等印刷費	100	500.00
NRW	NRW 機材の設置に必要な流量計チャンバーの建設	9	95,247.00
	音聴棒の購入	10	15,000.00
Other	事務所維持費、燃料費、ワークショップ開催費等雑費用		15,000.00
合計			**946,892.00**
総合計			**3,000,992.00**

出典:SHAPWASCO、GHAPWASCO、MCWW

第 7 章　プロジェクトの実施上の工夫・教訓

7.1　活動初期（準備期間）における工夫

(1)　JICA 専門家チームの編成

本プロジェクトでは、シャルキーヤにおける先行技プロで醸成された技術を効率的かつ速やかに GHAPWASCO 及び MCWW へ移転させることが重要視される。技術的に先行している SHAPWASCO 職員が GHAPWASCO 及び MCWW の SOP・NRW 削減活動を先導する必要がある事から、先行技プロを通じて SHAPWASCO と信頼関係を築いた日本人団員を専門家チームに配員することで、SHAPWASCO 主導のトレーニングを円滑に展開できた。

(2)　ローカル専門家の動員

C/P チームとの円滑なコミュニケーション、すなわち言葉の伝達だけではなく、背景を含めた情報交換を促進するため、ローカル専門家を加えて、「JICA 専門家チーム」を構成した。ローカル専門家の動員により、次の効果が確認された。

- エジプト国の上水道技術に係る問題や慣習に通じているため、改善すべき課題を現実的なものに整理できた。
- C/P のもつ現地の技能や技術を、効果的にプロジェクト活動へ組み込むことができた。
- 日本の上水道技術を、現地の言語で、現地の技術と関連付けて説明する事ができた。
- 日本人専門家が不在の期間でも、C/P チームとの情報交換やプロジェクト活動への支援を継続できた。

7.2　活動実施期間における工夫

(1)　SHAPWASCO の貢献

活動の初期段階において、プロジェクトの妥当性や有用性に対する C/P 機関の信頼を十分に得ることは一般的に容易ではない。しかし、SHAPWASCO の支援による GHAPWASCO 及び MCWW への十分な情報提供が C/P チームを安心させ、プロジェクトの円滑な開始に効果があった。また、ワークショップや公社間の技術的交流を通じた、先行技プロの経験や成果の紹介が、C/P チームの活動意欲向上へつながった。

(2)　ステアリング・コミッティ及びプロジェクトチーム会議の開催

本プロジェクトの基本方針である「公社間の連携を通じた技術・経験の移転」を円滑に進めるため、合同調整委員会（JCC）に加え、ステアリング・コミッティ（SC）及びプロジェクトチーム会議（PTM）を定期的に開催した。SC は HCWW 代表、各県上下水道公社の総裁及び JICA 専門家によって組織され、主にプロジェクト運営上の課題を協議する場である。PTM は、活動情報の共有やチームのモチベーション向上を目的に、GHAPWASCO、MCWW のそれぞれ

で、概ね 1 回/月の頻度で開催した。これらの会議は、C/P 活動を支援するものであり、プロジェクトへの積極的関与を促すことになった。

(3) C/P のイニシアチブ

モデル施設・地区の選定は、JICA 専門家チームの選定基準に C/P チームの意見を加味して実施した。JICA 専門家チームの施設選定基準は技術的要求事項が強く出たものであったが、C/P チームの考える選定基準は、県内の開発政策を重んじるものであった。そこには、JICA 専門家チームには考えが及ばない政治的・社会的配慮や将来の開発展開戦略が含まれており、モデル施設・地区の選定に欠かせない重要事項である。

C/P チームの将来展望を本プロジェクトの活動に反映させることは非常に重要であり、C/P チームの自主性や継続性を構築することにつながった。

(4) 公社間の協力と競争

GHAPWASCO 及び MCWW の 2 公社は、同時進行で同様のトレーニングプログラムを実施した。また、先行技プロの経験を持つ SHAPWASCO を含む 3 公社は、ワークショップやミーティングを通じてプログラムの進捗や課題を共有し、プロジェクトや事後活動に反映させる取り組みを行った。このような技術改善に係る情報交換は、公社間の協力関係構築を促した。また、競争心を生むことにもつながり、プロジェクトの効率的展開へ寄与した。

(5) TOT の実施（トレーニングプログラムの独自展開）

本プロジェクトには、SHAPWASCO から GHAPWASCO 及び MCWW への技術移転が組み込まれている。また、C/P 要員は、本部要員から支所要員への技術移転等、公社内での技術移転を実施した。これらの技術移転経験は、将来、トレーナーとして活動する際に活用される。また、トレーナーとしての経験が、C/P 要員の意識改革やモチベーション向上に寄与した。

- SHAPWASCO の要員は、GHAPWASCO 及び MCWW の職員へ、SOP、NRW 削減、漏水探知に係る訓練を提供した。これは、公社協力意識やモチベーション向上に寄与した。
- GHAPWASCO 及び MCWW の C/P チームは、公社内部で、支所や各施設等の要員に対する訓練を提供した。これは、訓練を提供した要員のモチベーションのみならず、支所や各施設の要員の意識も向上させた。また、NRW チームは、SHAPWASCO のヒヒヤ・トレーニングヤードを使って、支所要員へ漏水探知訓練を実施した。これは、新しい公社間連携の一例になる。

(6) 業務指標（PI）の見える化

プロジェクトチームは、プロジェクト活動の評価のために、目に見える（数値で表示される）業務指標（PI）を選定した。定期的に PI を成果として整理・評価することが、C/P チームのモチベーション向上につながった。また、PI があることが、HCWW や各公社の総裁への情報伝達を促進させ、SOP・NRW 削減・WDM 活動に係る各公社総裁のコミットメントを引き出した。

なお、選定した PIs は、表 7-1 のとおりである。

表 7-1　PIs の一覧

区分	PI	備考
SOP	有効水量率（%）	浄水過程の水量ロスを計測
	単位薬品使用量（g/m^3） 硫酸アルミニウム、液体塩素、 次亜塩素酸カルシウム、過マンガン酸カリウム	浄水量 $1m^3$ 当たりの薬品使用量を計測
	単位電力消費量（kWh/ m^3）	浄水量 $1m^3$ 当たりの電力使用量を計測
NRW	NRW 率（%）	配水量に対する NRW の比率を計測
	NRW 削減率（%）	活動前後の NRW 率の改善度を計測
WDM	低水圧発生率（%）	測定箇所数・測定時間の延べ数に占める、低給水圧時間数の割合を計測
	1,000 接続当たりの断水及び低水圧における苦情数（件数/1,000 接続）	ホットラインに寄せられる苦情数を分析

出典：プロジェクトチーム

(7)　モチベーション向上

本プロジェクトでは、HCWW や各公社の総裁やトップ・マネジメント層の強いコミットメントが成功に導いたと言える。しかし、以下の活動が、トップ・マネジメント層とともに C/P 要員のモチベーション向上に寄与した。

- 前述のように業務指標（PI）は、改善やコスト削減に関して、C/P 要員や各公社総裁のモチベーション向上に寄与した。PI は、3 公社間の競争感を維持することにも貢献し、改善活動を促進させた。
- プロジェクトチームは、薬品・NRW 等の削減及び改善活動について、費用に換算して評価した。費用換算は、活動成果をわかりやすく報告する手段である上、C/P 要員にとっても改善認識のために最適な指標である。これにより、プロジェクトに係るモチベーションが向上した。
- 本邦研修やヨルダン水道庁との意見交換は、上水道事業の開発・改善の面で、C/P 要員を刺激した。同刺激がモチベーション向上につながった。
- 公社間連携や他県への展開がプロジェクトに組み込まれているため、C/P 要員は、他県職員をトレーニングする機会を持った（または、持つ予定である）。C/P 要員は、トレーナーを務めることを誇りに感じ、それがモチベーションを向上させた。

7.3　教訓

(1)　水需要と原水水質の季節変動

SOP チームは業務指標（PI）として、単位薬品消費量を設定して活動に取り組んだ。しかし、原水水質の季節変動が薬品注入率に大きく作用したため、表流水浄水場で目標達成しない時期が発生した。また、WDM チームも低水圧発生率と断水及び低水圧の苦情件数を PI として設定したが、水需要の季節変動が影響したため、一定の PI 値を維持することが困難であった。

例示した PI の年間平均値でプロジェクト評価することが理想的であるものの、プロジェクト期間が短期間の場合、十分なモニタリング期間を確保できない。したがって、PI を設定する

際には、条件になる水質や需要の季節変動に十分に注意するとともに、十分なモニタリング期間を確保する必要がある。

(2)　電力事情

2013 年から 2014 年に掛けて、エジプト全土で電力不足による断続的な停電が続いた。断続的な停電は、上水道施設の運転に大きく影響（運転休止）を及ぼし、Zagazig 市でも、多くの浄水・配水施設が頻繁に休止状態に見舞われた。この状況は、低水圧発生率と断水及び低水圧の苦情件数に係る PI 達成に大きく影響を及ぼした。

PI を設定する際、プロジェクトの関連インフラに影響を与える政治的／経済的条件を十分に考慮する必要がある。

(3)　機材調達

WDM 活動の実施に当たり、配水監視システムに必要な機材（定置形超音波流量計、水圧測定装置、現場テレメーターシステム、中央監視システム）が JICA から供与された。SHAPWASCO は機材（ハードウェア）の据付に係る十分な知識と技能を持ち合わせているため、機材納入業者の契約に据付工事を含まなかった。同業者の契約業務には、約 2 週間の据付方法・使用方法・維持管理方法に係る指導（トレーニング）が規定されたものの、現場でシステムとして仕上げるという条項が契約に含まれなかった。その状況下、据付工事後にソフトウェアやシステム設定の不具合が発生し、同業者の作業ではあるものの、その対応に多くの時間が費やされる結果となった。

この経験から、システムを構成する機材を調達する場合、据付工事（試運転調整含む）までを契約に含めることが推奨される。

(4)　配水監視システムの効果

4.3 項で述べるように、不十分な施設が配水管理の障害になっており、配水監視システムは配水問題を根本的に解決するツールにならない。しかし、同監視システムは、需要に応じた配水操作（浄水場や井戸のポンプ運転操作）を可能にし、配水状況の改善に効果があることが確認された。配水状況の流量や水圧面での可視化は、浄水場や井戸のオペレーターの管理意識を向上させるとともに、適切なポンプ操作面で C/P 要員を支援する。

第 8 章　プロジェクト評価

8.1　中間レビュー

8.1.1　中間レビューの目的

中間レビューが 2012 年 11 月に以下の目的で実施された。

- ◆ プロジェクト活動の実施状況及び成果状況を確認する
- ◆ 下記の 5 項目評価の観点から総合評価を実施する
  1) 妥当性、2) 有効性、3) 効率性、4) インパクト、5) 持続性
- ◆ 残りのプロジェクト期間中の活動について、更なる改善を提言する

中間レビュー調査メンバー及び日程は、表 8-1 及び 8-2 に示すとおりである。

表 8-1　中間レビュー調査メンバー

氏名	担当分野	所属
エジプト側		
Dr. Salah Bayoumi	プロジェクト・セクター長	HCWW
日本側		
大村　良樹	総括	国際協力専門員
濱野　聡	協力企画	JICA 地球環境部水資源第一課
岩瀬　信之	評価分析	コンサルタント

出典:JICA 専門家

表 8-2　中間レビュー調査日程表

日付			活動
2012 年 11 月 9 日	金	午前	
		午後	東京発（岩瀬）
2012 年 11 月 10 日	土	午前	カイロ着（岩瀬）
		午後	団内会議
2012 年 11 月 11 日	日	午前	JICA エジプト事務所との協議
		午後	HCWW へ表敬・協議
2012 年 11 月 12 日	月	午前	GHAPWASCO 総裁との協議
		午後	GHAPWASCO カウンターパートへのヒアリング
2012 年 11 月 13 日	火	午前	MCWW 総裁との協議
		午後	MCWW カウンターパートへのヒアリング
2012 年 11 月 14 日	水	午前	SHAPWASCO ワークショップ
		午後	SHAPWASCO 現場視察 SHAPWASCO 総裁との協議
2012 年 11 月 15 日	木	午前	資料整理
		午後	資料整理
2012 年 11 月 16 日	金	午前	資料整理
		午後	資料整理
2012 年 11 月 17 日	土	午前	資料整理/JICA 専門家へのヒアリング
		午後	資料整理/JICA 専門家へのヒアリング 東京発（大村、濱野）
2012 年 11 月 18 日	日	午前	HCWW との協議 カイロ着（大村、濱野）

日付			活動
		午後	JICA エジプト事務所との協議 団内協議
2012 年 11 月 19 日	月	午前	MCWW 総裁及びカウンターパートとの協議
		午後	MCWW 現場視察
2012 年 11 月 20 日	火	午前	GHAPWASCO 総裁及びカウンターパートとの協議
		午後	GHAPWASCO 現場視察
2012 年 11 月 21 日	水	午前	SHAPWASCO 総裁及びカウンターパートとの協議
		午後	団内協議
2012 年 11 月 22 日	木	午前	公開セミナー（タンタ）
		午後	団内協議
2012 年 11 月 23 日	金	午前	資料整理
		午後	資料整理
2012 年 11 月 24 日	土	午前	資料整理
		午後	資料整理
2012 年 11 月 25 日	日	午前	HCWW との MD 協議・報告
		午後	団内協議
2012 年 11 月 26 日	月	午前	JCC（カイロ）
		午後	JCC（カイロ）
2012 年 11 月 27 日	火	午前	エジプト大使館表敬
		午後	カイロ発

出典:JICA 専門家

8.1.2 中間レビューの結果

中間レビューの結果を添付-7 に示す。同結果の要約は、下記のとおりである。

(1) 評価結果

- ◆ 本プロジェクトでは、プロジェクト活動に多少の遅れが見られるものの、上水道施設の運営維持管理能力の強化が認められる。
- ◆ 本プロジェクトの妥当性は「非常に高い」と評価された。
- ◆ 本プロジェクトの有効性は「中程度」と評価された。
- ◆ 本プロジェクトの効率性は「比較的高い」と評価された。
- ◆ 本プロジェクトのインパクトは「不透明な部分が多いが、3 公社において能力強化が行われ、モデル地区・施設での成果が 3 県に波及すれば、上位目標達成の見込みが十分にあると判断する」と評価された。
- ◆ 本プロジェクトの持続性は「比較的高いものの、現時点では不透明である。」と評価された。

(2) 提言と教訓

- ◆ プロジェクトチームは、業務指標（PI）の目標を可能な限り早く設定すべきである。
- ◆ GHAPWASCO と MCWW は正式に専任（フルタイム）のプロジェクト・ユニットを設置すべきである。
- ◆ NOPWASD と上下水道公社の関係を強化し、維持管理からの施設設計へのフィードバックや施設移管時に必要な情報を明確にする必要がある。これにより、SOP 活動の効率性と有効性が高まり、施設設計の改善につながる。

- ナイルデルタ地域全体へ普及するために、制度的・体制的な改善が必要である。
- 普及活動のために、機器調達や施設のリハビリ必要な予算や人的資源の確保が必要である。

8.2 終了時評価

8.2.1 終了時評価の目的

終了時評価が 2014 年 2 月に以下の目的で実施された。

- プロジェクト活動の実施状況・成果状況を確認する
- 下記の 5 項目評価の観点から総合評価を実施する
  1) 妥当性、2) 有効性、3) 効率性、4) インパクト、5) 持続性
- 残りのプロジェクト期間中の活動について、更なる改善を提言する

終了時評価調査メンバー及び日程は、表 8-3 及び 8-4 に示すとおりである。

表 8-3 終了時評価調査チームメンバー

氏名	担当分野	所属
エジプト側		
Dr. Rifaat Abdel Wahaab	研究開発セクター長	HCWW
日本側		
大村　良樹	総括	国際協力専門員
福島　桃	協力企画	JICA 地球環境部水資源部水資源第一課
吉永　恵実	評価分析	コンサルタント

出典:JICA 専門家

表 8-4 終了時評価調査日程表

日付			活動
2014 年 2 月 12 日	水	午前	
		午後	東京発（吉永）
2014 年 2 月 13 日	木	午前	カイロ着（吉永）
		午後	JICA エジプト事務所との協議
2014 年 2 月 14 日	金	午前	資料整理
		午後	資料整理
2014 年 2 月 15 日	土	午前	GHAPWASCO の Samanoud 浄水場の SOP メンバーへのヒアリングと現場視察
		午後	JICA 専門家とスタッフへのヒアリング
2014 年 2 月 16 日	日	午前	GHAPWASCO の Santa 地区の NRW メンバーへのヒアリングと現場視察
		午後	IWSP へのヒアリング、GHAPWASCO 総裁へのヒアリング
2014 年 2 月 17 日	月	午前	MCWW 総裁へのヒアリング、SOP 及び NRW メンバーへのヒアリング
		午後	MCWW の Shebeen 地区の SOP 現場視察
2014 年 2 月 18 日	火	午前	SHAPWASCO 総裁へのヒアリング、WDM メンバーへのヒアリング
		午後	WDM 活動の現場視察
2014 年 2 月 19 日	水	午前	GHAPWASCO の Mahalet Marhoom 鉄・マンガン除去施設の視察
		午後	MCWW の Barket El Sab'a 地区の NRW 現場視察
2014 年 2 月 20 日	木	午前	資料整理
		午後	資料整理

日付			活動
2014 年 2 月 21 日	金	午前	資料整理
		午後	資料整理、東京発（大村、福島）
2014 年 2 月 22 日	土	午前	資料整理、カイロ着（大村、福島）
		午後	団内協議
2014 年 2 月 23 日	日	午前	HCWW 表敬・協議
		午後	GIZ へのヒアリング
2014 年 2 月 24 日	月	午前	SHAPWASCO の中央監視システム視察、SHAPWASCO 総裁及び WDM メンバーへのヒアリング
		午後	
2014 年 2 月 25 日	火	午前	NRW 現場視察
		午後	Zefta 浄水場現場視察及び SOP メンバーへのヒアリング
2014 年 2 月 26 日	水	午前	団内会議
		午後	HCWW との協議
2014 年 2 月 27 日	木	午前	MCWW の Sadat 浄水場現場視察
		午後	MCWW の Gezy 鉄・マンガン除去施設の現場視察
2014 年 2 月 28 日	金	午前	団内会議
		午後	資料整理
2014 年 3 月 1 日	土	午前	資料整理
		午後	資料整理
2014 年 3 月 2 日	日	午前	JCC
		午後	
2014 年 3 月 3 日	月	午前	JICA エジプト事務所との協議
		午後	エジプト大使館表敬、カイロ発（大村、福島、吉永）

出典:JICA 専門家

8.2.2 終了時評価の結果

終了時評価の結果を添付-8 に示す。同結果の要約は、下記のとおりである。

(1) 評価結果

- ◆ 本プロジェクトの実施体制はよく機能しており、全体的に重要な意思決定や情報が C/P 内で共有されている。
- ◆ 本プロジェクトの妥当性は「高い」と評価された。
- ◆ 本プロジェクトの有効性は「比較的高い」と評価された。
- ◆ 本プロジェクトの効率性は「比較的高い」と評価された。
- ◆ 本プロジェクトのインパクトは「高い」と評価された。
- ◆ 本プロジェクトの持続性は「比較的高い」と評価された。

(2) 提言と教訓

<u>本プロジェクトが終了するまでに実施すべき活動の提案</u>

1) JICA は、成果 4（WDM 活動）の効果発現のため、プロジェクト期間を延長することが望ましい。

2) 本プロジェクトの期間中に実施した NRW 及び SOP 活動の経済効果を取り纏め、エジプト側関係者と共有すること。

3) 本プロジェクトの期間中に確認された施設設計の問題点を取り纏め、エジプト側関係者に共有すること。

本プロジェクト終了後にエジプト側で継続すべき活動の提案

1) HCWW は、浄水施設の維持管理者側から見た施設設計に対する意見を、浄水施設の設計と建設監督を担当する NOPWASD 関係者と共有すること。また NOPWASD 関係者を本プロジェクトのモデル施設に招待するなどの機会を設け、設計側と維持管理側の具体的な情報交換の促進に務めること。

2) GHAPWASCO 及び MCWW は、プロジェクトの成果を維持・普及させるため、以下を実施すること。

a) NRW 対策について、策定済みの 5 ヵ年計画を確実に実施すること。また円滑な計画実施に向け、以下の措置をとること。

- 現在の NRW 削減活動実施体制を維持し、県内支所との更なる連携強化に務める。
- NRW 削減活動に必要な車両および作業に必要な資機材を確保する。

b) SOP について、策定済みの展開計画を確実に実施すること。また円滑な計画実施に向け、以下を実施すること。

- 浄水場および鉄･マンガン除去施設の運転維持管理に必要なスペアパーツの購入すること。
- 計装機器の較正すること。

3) スーパーゴールの達成に向け、GHAPWASCO、MCWW、SHAPWASCO は県内での普及活動完了後、県外への成果普及にも務めること。

4) GHAPWASCO、MCWW は、職員の技術の維持と更なる意識向上を図るため、プロジェクトで得た経験・成果を積極的に発信すること。その方法として、本プロジェクトで構築した公社間の協力関係を活用し、技術者レベルの経験共有を図るセミナーを主催することなどが考えられる。

5) 適切な水量の計測と水道料金徴収率の向上に向け、HCWW、GHAPWASCO、MCWW、SHAPWASCO は、定期的なメータ交換の必要性に対する水道利用者の意識向上に努め、交換を促進する具体的な支援策を検討すること。またメータの維持管理と定期的交換の確実な実施に向け、HCWW は、メータを含む家庭への接続を、利用者ではなく上下水道公社の保有とすることを検討すること。

6) 成果 4 の効果を確認した上で、SHAPWASCO は、プロジェクト対象外の県内配水施設に対し、活動の普及を図ること。その際は遠隔モニタリングの機材の普及だけでなく、モニタリングを通じて判明した問題に対応する技術の普及も実施すること。遠隔モニタリングを通じて収集した正確なデータを元に、SHAPWASCO は Zagazig 内の配水管理の現況を分析し、低水圧や断続給水といった問題の解決策を確立すること。

7) SHAPWASCO は、本プロジェクトから供与を受けた遠隔モニタリングシステムの適切な維持管理を行うこと。その具体的な措置として、同システムの製造業者とメンテナンス契約を結び、同業者との協力でソフトウェアに生じる不具合やアップグレードに適切に対処する。また、上記メンテナンス契約で対応ができない機材の不具合に対応するための予算を確保する。

8.3 終了時評価（延長期間）

8.3.1 終了時評価（延長期間）の目的

政変及び機材・ソフトウェアの調整不備の影響を受けたため、本プロジェクトの配水管理活動（WDM 活動）の実施期間が、13 ヶ月間延長された。JICA は、終了時評価を 2014 年 2 月から 3 月に実施したが、活動遅延していた WDM を最終評価対象から除外した（参考情報分析と提言に留めた）。

JICA は、2015 年 3 月から 4 月に改めて終了時評価（延長期間）を実施し、WDM 活動の評価とプロジェクト成果の情報更新を実施した。

終了時評価調査（延長期間）のメンバー及び日程を表 8-5 及び 8-6 に示す。

表 8-5 終了時評価調査（延長期間）チームメンバー

氏名	担当分野	所属
日本側		
大村　良樹	総括	国際協力専門員
柏原　友子	評価分析	JICA 地球環境部水資源･防災グループ水資源第一チーム

出典:JICA 専門家

表 8-6 終了時評価調査（延長期間）日程表

日付			活動
2015 年 3 月 28 日	土	午前	カイロ着（大村、柏原）
		午後	団内会議
2015 年 3 月 29 日	日	午前	団内会議
		午後	HCWW 表敬・協議
2015 年 3 月 30 日	月	午前	SHAPWASCO の WDM 施設・機材の視察
		午後	SHAPWASCO の WDM メンバーへのヒアリング
2015 年 3 月 31 日	火	午前	資料整理
		午後	団内会議
2015 年 4 月 1 日	水	午前	HCWW への MD 協議・報告
		午後	JCC
2015 年 4 月 2 日	木	午前	資料整理
		午後	JICA エジプト事務所報告、カイロ発（大村、柏原）

出典:JICA 専門家

8.3.2 終了時評価（延長期間）の結果

終了時評価（延長期間）の結果を添付-9 に示す。評価の要約は、下記のとおりである。

(1) 評価結果

- ◆ 本プロジェクトは、3 公社の上水道施設の運営維持管理の改善を観点で、SOP を基礎にした運転・維持管理、NRW の削減、配水管理（WDM）に係る情報やスキルを提供した。
- ◆ C/P メンバーがプロジェクト活動に積極的に取り組んでいること、エジプト国の既存技術を活用しながら効率を高める努力をしていることが観察された。
- ◆ 本プロジェクトの妥当性は「高い」と評価された。
- ◆ 本プロジェクトの有効性は「比較的高い」と評価された。
- ◆ 本プロジェクトの効率性は「中程度」と評価された。
- ◆ 本プロジェクトのインパクトは「高い」と評価された。
- ◆ 本プロジェクトの持続性は「比較的高い」と評価された。

(2) 提言

<u>本プロジェクト終了後にエジプト側で実施すべき活動の提言</u>

2014 年 2 月の終了時評価調査から追加及び修正された提言は下記のとおりである。

SHAPWASCO は、プロジェクトの成果を維持・普及させるため、以下の項目を実施するべきである。

1) 本プロジェクトから供与された遠隔モニタリングシステムの適切な維持管理を行うこと。その具体的な措置として、同システムの製造業者とメンテナンス契約を結び、同業者との協力でソフトウェアに生じる不具合やアップグレードに適切に対処する。また、上記メンテナンス契約で対応ができない機材の不具合に対応するための予算を確保する。
2) 現在計画されている WDM チームの人員増員を確実に実施し、新たなスタッフに対する研修を行うこと。また、現在実施されている井戸オペレーターへの研修及び指導を継続すること。
3) WDM に基づく配水へ改善すること。WDM にかかる SHAPWASCO 及び HCWW の経営層への定期報告（現在 2 か月毎）を継続すること。正確なデータ取得と分析を継続し、その上で低水圧や断続給水といった問題の解決を図ること。
4) WDM 活動を県内に普及すること。その際は、遠隔モニタリングの機材の普及だけでなく、モニタリングを通じて判明した問題への対応も実施すること。

本プロジェクトのスーパーゴールを達成するため、以下を提言する。

1) スーパーゴールの達成に向け、GHAPWASCO、MCWW、SHAPWASCO と連携して県内での普及活動完了後、県外への成果普及にも務めること。
2) GHAPWASCO、MCWW、SHAPWASCO は、職員の技術の維持と更なる意識向上を図るため、プロジェクトで得た経験・成果を積極的に発信すること。（その方法として、本プロジェクトで構築した公社間の協力関係を活用し、技術者レベルの経験共有を図るセミナーを主催すること。）

第 9 章　各種会議の開催

9.1　合同調整委員会（JCC）

合同調整委員会が以下のとおり開催された。議事録は添付-3 に示すとおりである。

表 9-1　合同調整委員会の開催リスト

No.	開催日	会議内容
第 1 回	2011 年 9 月 27 日	APO、PDM1、PO1 の議論及び承認
第 2 回	2012 年 3 月 11 日	APO の議論及び承認
第 3 回	2012 年 11 月 26 日	PDM2、PO2 の議論及び承認
第 4 回	2013 年 10 月 30 日	PDM3、PO3 の議論及び承認
第 5 回	2014 年 3 月 2 日	終了時評価レポートの結果及び承認
第 6 回	2015 年 4 月 2 日	終了時評価(延長期間)の結果及びプロジェクトの終了を JCC で確認された。

出典:JICA 専門家

9.2　ステアリング・コミッティ（SC）

ステアリング・コミッティが以下のとおり開催された。議事録は添付-4 に示すとおりである。

表 9-2　ステアリング・コミッティの開催リスト

No.	開催日	会議内容
第 1 回	2011 年 6 月 8 日	➢ ステアリング・コミッティメンバーの承認 ➢ カウンターパートチームメンバーの承認 ➢ モデル施設及びモデル地区の準備計画 ➢ JICA 専門家が供与する機材リストの承認 ➢ SHAPWASCO が主催のワークショップ及びセミナー ➢ IWSP との連携 ➢ マネジメント研修日程の承認
第 2 回	2011 年 9 月 12 日	➢ SOP と NRW 本邦研修生の候補選任 ➢ 供与機材受入と責任体制 ➢ 住民意識の促進するため活動 ➢ PDM1 と PO1 の承認
第 3 回	2012 年 2 月 26 日	➢ 第 2 期（2012 年 1 月～2013 年 2 月）の APO の承認 ➢ 第 2 回 JCC の議題 ➢ WDM 本邦研修日程の承認 ➢ 効果的な上水道管理のため住民啓発必要性 ➢ JICA が供与する機材管理
第 4 回	2012 年 7 月 16 日	➢ SHAPWASCO の WDM 活動のパイロット地区の議論 ➢ GHAPWASCO と MCWW の SOP 及び NRW 活動の進捗報告 ➢ 第 2 期（2012 年 1 月～2013 年 2 月）の全体日程の承認 ➢ 中間レビュー及び公開セミナー日程の承認
第 5 回	2012 年 11 月 8 日	➢ 第三国研修のヨルダン水道庁との情報交換報告 ➢ 中間レビュー調査の進捗報告 ➢ NRW 水収支調査の問題 ➢ PIs の目標に係る提案 ➢ 第 2 期（2012 年 1 月～2013 年 2 月）の全体日程の変更
第 6 回	2013 年 6 月 20 日	➢ 第 3 期（2013 年 3 月～2014 年 8 月）の APO の承認 ➢ GHAPWASCO と MCWW の SOP 及び NRW 活動の進捗報告 ➢ SHAPWASCO の WDM 活動の進捗報告

No.	開催日	会議内容
		➢ PI 目標値の承認 ➢ 終了時評価と公開セミナー日程の承認
第 7 回	2014 年 8 月 31 日	➢ SOP と NRW トレーナーの承認 ➢ WDM 活動の期間延長の承認 ➢ PO の変更

出典:JICA 専門家

9.3 プロジェクトチーム会議（PTM）

プロジェクトチーム会議において、GHAPWASCO 及び MCWW 内の SOP 及び NRW チームの進捗情報を共有し、問題解決方法の討議を実施した。議事録は添付-5 に示すとおりである。

9.4 セミナー及びワークショップ

セミナー及びワークショップは以下のように開催された。

表 9-3　公社間協力主催セミナー、ワークショップ及びトレーニングリスト

	開催日	タイトル	プログラム	参加者	トレーナー
	2011 年 4 月 – 2012 年 1 月（第 1 期）				
1	2011 年 6 月 8～9 日 10:00-13:00	第 1 回ミニセミナー（SOP 活動）	- SHAPWASCO の SOP 活動紹介（SHAPWASCO の C/P チームの発表） - 討議	• プロジェクト・マネージャー、プロジェクト・コマネージャー • GHAPWASCO の C/P チーム • GHAPWASCO の運転技術者 • MCWW の C/P チーム • MCWW の運転技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
2	2011 年 6 月 18～19 日 10:00-13:00	第 2 回ミニセミナー（NRW 削減活動）	- SHAPWASCO の NRW 削減活動紹介（SHAPWASCO の C/P チームの発表） - 討議	• GHAPWASCO の C/P チーム • GHAPWASCO の技術者 • MCWW の C/P チーム • MCWW の技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
3	2011 年 7 月 2～3 日, 10:00-14:30	第 3 回ミニセミナー（SOP 及び NRW 活動）	- モデル施設及びパイロット地区の選定基準について（SHAPWASCO の C/P チームの発表） - UFW 及び NRW の違い（SHAPWASCO の C/P チームの発表）	• GHAPWASCO の C/P チーム • GHAPWASCO の技術者 • MCWW の C/P チーム • MCWW の技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
4	2011 年 7 月 13 日 10:30-12:30	井戸モニタリング活動ワークショップ	- 井戸モニタリングの重要性と実施方法（SHAPWASCO の C/P チームの発表） - 井戸モニタリング結果の活用法（SHAPWASCO の C/P チームの発表） - 討議	• GHAPWASCO の C/P チーム • GHAPWASCO の運転技術者 • MCWW の C/P チーム • MCWW の運転技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
5	2011 年 9 月 27 日 12:00-13:50	キック・オフ・セミナー	- JICA プロジェクトの進捗及び背景（HCWW プロジェクト・セクター長の発表） - SOP 活動計画及び進捗（GHAPWASCO、MCWW、SHAPWASCO の C/P チームの発表） - NRW 削減活動計画及び進捗	• 全国の上下水道公社 • エジプトの水道サービス関係機関 • エジプト水セクターの対外援助機関 • プロジェクト・マネージャー、プロジェクト・コマネージャー • GHAPWASCO の C/P チーム • GHAPWASCO の技術者	SHAPWASCO GHAPWASCO MCWW

	開催日	タイトル	プログラム	参加者	トレーナー
			（GHAPWASCO、MCWW、SHAPWASCO の C/P チームの発表） - WDM 活動計画（SHAPWASCO の C/P チームの発表） - 討議	• MCWW の C/P チーム • MCWW の技術者 • SHAPWASCO の C/P チーム • JICA 専門家	
6	2011 年 10 月 10 日 10:00-14:30	SHAPWASCO での SOP 及び NRW 削減活動サイトツアー	- サイトツアー説明（SHAPWASCO の C/P チームの発表） - Zagazig 表流水浄水場視察（SHAPWASCO の C/P チームの案内） - 夜間最小流量調査の流量計サイト視察（SHAPWASCO の C/P チームの案内） - Hihya トレーニングヤード視察（SHAPWASCO の C/P チームの案内） - Hihya 浄水場視察（SHAPWASCO の C/P チームの案内）	• GHAPWASCO の CP チーム • MCWW の C/P チーム • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
7	2011 年 10 月 19～20 日、 22～23 日 10:00-14:30	NRW 削減トレーニング	- 夜間最少流量調査方法、流量測定の原理の学習 - 現場実習 - 音聴棒、漏水探知器、流量計の使用方法 - 流量計からコンピューターへのデータ送信方法	• GHAPWASCO の CP チーム • MCWW の C/P チーム • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
8	2011 年 10 月 26～30 日, 10:00-12:30	NRW 削減活動アクションプランワークショップ	- アウトプット及び目的（JICA 専門家の発表） - プロジェクト期間（JICA 専門家の発表） - アクションプランの内容（JICA 専門家の発表） - 各アクションの流れ（JICA 専門家の発表） - パイロット地区とモデル地区（GHAPWASCO と MCWW の C/P チームの発表） - 各アクションの説明（GHAPWASCO と MCWW の C/P チームの発表） - NRW 削減活動日程（GHAPWASCO と MCWW の C/P チームの発表） - NRW 削減のアプローチ（JICA 専門家の発表）	• GHAPWASCO の C/P チーム • GHAPWASCO の技術者 • MCWW の C/P チーム • MCWW の技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO

	開催日	タイトル	プログラム	参加者	トレーナー
9	2011 年 11 月 20 日 10:00-12:00	水質管理活動ワークショップ	- 水質管理とは（SHAPWASCO の C/P チームの発表） - SHAPWASCO の水質管理について（SHAPWASCO の C/P チームの発表） - ISO と SOP との関係（GHAPWASCO の C/P チームの発表） - 討議	• GHAPWASCO の C/P チーム • GHAPWASCO の運転技術者 • MCWW の C/P チーム • MCWW の運転技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
	2012 年 2 月 –2013 年 3 月（第 2 期）				
10	2012 年 3 月 7 日 12:00-15:00	SHAPWASCO での NRW 削減活動ワークショップ	**夜間最少流量調査測定** - 水圧計機器のデータ収集 - 流量計機器のデータ収集 **漏水調査** - バルブの音聴棒調査 - 路面の音聴調査 - 相関式漏水調査	• GHAPWASCO の C/P チーム • MCWW の C/P チーム • JCIA 専門家	JICA 専門家 その他関係者
11	2012 年 4 月 22～24 日 10:00-14:30	SOP 活動ワークショップ	- 運転記録書について（GHAPWASCO と MCWW の C/P チームの発表） - 運転記録書の活用について（SHAPWASCO の C/P チームの発表） - 水質管理方法について（GHAPWASCO と MCWW と SHAPWASCO の C/P チームの発表） - 討議 - SHAPWASCO からコメント	• GHAPWASCO の C/P チーム • GHAPWASCO の運転技術者 • MCWW の C/P チーム • MCWW の運転技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
12	2012 年 9 月 27 日 10:00-14:30	MCWW での SOP 活動サイトツアー	- サイトツアーの説明（MCWW の C/P チームの発表） - Mahatet El Sadat El Satheya 表流水浄水場視察 - 討議	• GHAPWASCO の C/P チーム • GHAPWASCO の運転技術者 • MCWW の C/P チーム • MCWW の運転技術者 • JICA 専門家	その他関係者
13	2012 年 9 月 30 日~10 月 4 日 10:00-12:30	GHAPWASCO の NRW 削減活動特別ワークショップ	- NRW 削減活動の紹介（GHAPWASCO の C/P チームの発表） - 討議	• エジプトの水道サービス関係機関 • GHAPWASCO の C/P チーム • GHAPWASCO の技術者 • JICA 専門家 • Utility & Positioning Systems Ltd.（民間会社）	GHAPWASCO

	開催日	タイトル	プログラム	参加者	トレーナー
14	2012 年 10 月 14～18 日	ヨルダン水道庁とエジプト上下水道公社との情報交換	- ヨルダンの JICA プロジェクト（NRW 削減活動）の成果発表 - エジプトの JICA プロジェクト（SOP 及び NRW 削減活動）の発表 - ヨルダン現場視察 - 意見交換	• HCWW プロジェクト・セクター長 Dr. Salah Bayoumi • SHAPWASCO プロジェクト・セクター長 Mr. Shaker Abdelfattah • GHAPWASCO　O&M セクター長 Mr. Adel Attia • MCWW　O&M セクター長 Mr. Ayman Bassuni • JICA 専門家	ヨルダン側及びエジプト側関係機関の技術者
15	2012 年 11 月 14 日 11:00-14:00	SHAPWASCO での SOP と NRW 削減活動ワークショップ	- NRW 削減活動の進捗報告（GHAPWASCO と MCWW の C/P チームの発表） - SOP 活動の進捗発表（GHAPWASCO と MCWW の C/P チームの発表） - 討議 - SHAPWASCO からコメント	• GHAPWASCO の C/P チーム • GHAPWASCO の技術者 • MCWW の C/P チーム • MCWW の技術者 • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
16	2012 年 11 月 22 日 10:00-15:00	公開セミナー	- JICA プロジェクトの進捗及び背景（HCWW プロジェクト・セクター長、JICA 専門家総括） - SOP 活動計画及び中間結果（GHAPWASCO と MCWW の C/P チームの発表） - NRW 削減活動計画及び中間結果（GHAPWASCO と MCWW の C/P チームの発表） - WDM 活動計画及び中間結果（SHAPWASCO の C/P チームの発表） - MCWW 総裁と上下水道大臣からの激励 - 討議	• 上下水道大臣 • HCWW 総裁 • ナイルデルタ地域の上下水道公社 • SHAPWASCO と GHAPWASCO と MCWW の C/P チーム • エジプト水セクターの対外援助機関 • JICA と JICA 専門家	SHAPWASCO GHAPWASCO MCWW
17	2012 年 12 月 9 日 10:00-14:30	SOP 水質管理活動ワークショップ	- 水質実験の視察 - 討議	• GHAPWASCO の C/P チーム • MCWW の C/P チーム • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO
18	2013 年 1 月 9 日 12:00-15:00	水質管理活動ワークショップ	- 標準水質分析方法（SHAPWASCO の C/P チームの発表） - 水質管理調査について（SHAPWASCO の C/P チームの発表）	• GHAPWASCO の C/P チーム • GHAPWASCO のラボラトリー化学者 • MCWW の C/P チーム • MCWW のラボラトリー化学者	SHAPWASCO

	開催日	タイトル	プログラム	参加者	トレーナー
			- 討議	• SHAPWASCO の C/P チーム • JICA 専門家	
19	2013 年 1 月 15 日 11:00-15:00	SHAPWASCO での漏水調査トレーニング	- 漏水調査の相関式漏水探知、埋設探知、音聴棒機材使用法 - 討議	• GHAPWASCO の NRW チーム • GHAPWASCO の支所 NRW チーム GHAPWASCO • SHAPWASCO の NRW チーム • JICA 専門家	SHAPWASCO GHAPWASCP の本部 C/P チーム
20	2013 年 2 月 13 日 11:00-15:00	SHAPWASCO での漏水調査トレーニング	- 漏水調査の相関式漏水探知、埋設探知、音聴棒機材使用法. - 討議	• MCWW の NRW チーム • MCWW の支所 NRW チーム • SHAPWASCO の NRW チーム • JICA 専門家 • Qalubya 上下水公社スタッフメンバー	SHAPWASCO MCWW の本部 C/P チーム
	2013 年 4 月 – 2015 年 4 月（第 3 期）				
21	2013 年 6 月 2 日 10:00-14:00	MCWW での SOP 活動ワークショップ	- SOP 活動計画と中間報告（GHAPWASCO と MCWW の C/P チームの発表） - 討議	• GHAPWASCO の C/P チーム • MCWW の C/P チーム • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO GHAPWASCO MCWW
22	2014 年 3 月 6 日 11:00-15:00	公開セミナー	- JICA プロジェクトの進捗及び背景（HCWW 副総裁、JICA 専門家総括） - SOP 活動進捗及び成果（GHAPWASCO と MCWW の C/P チームの発表） - NRW 削減活動進捗及び成果（GHAPWASCO と MCWW の C/P チームの発表） - WDM 活動進捗及び成果（SHAPWASCO の C/P チームの発表） - 討議	• HCWW 総裁 • ナイルデルタ地域の上下水道公社 • SHAPWASCO と GHAPWASCO と MCWW の C/P チーム • エジプト水セクターの対外援助機関 • JICA と JICA 専門家	SHAPWASCO GHAPWASCO MCWW
23	2014 年 8 月 28 日 10:00 - 14:00	SHAPWASCO の WDM 活動ワークショップ	- WDM 配水監視システムとモニタリング活動からのアウトプットの説明 - WDM 施設・機材の視察 - 討議	• GHAPWASCO の C/P チーム • MCWW の C/P チーム • SHAPWASCO の C/P チーム • JICA 専門家	SHAPWASCO

出典:JICA 専門家

表 9-4　各公社の内部ワークショップリスト

	開催日	タイトル	プログラム	参加者	トレーナー
	2011 年 4 月 – 2012 年 1 月（第 1 期）				
1	2011 年 9 月 21 日 9:30-12:00	WDM 活動セミナー	- プロジェクト概要（JICA 専門家の発表） - WDM 概論と活動方針（JICA 専門家の発表 - WDM アクションプランの概要（JICA 専門家の発表） - WDM 活動のパイロット地区選定の取組み（SHAPWASCO の C/P チームの発表）	• SHAPWASCO の C/P チーム • SHAPWASCO の運転技術者 • JICA 専門家	JICA 専門家 その他関係者
	2012 年 2 月 –2013 年 3 月（第 2 期）				
2	2012 年 3 月 25 日 12:00-15:00	GHAPWASCO の NRW 削減活動ワークショップ	- メーター読み調査について（JICA 専門家の発表） - Tanta 現場サイトツアー - 討議	• GHAPWASCO の C/P チーム • JICA 専門家	JICA 専門家
3	2012 年 3 月 27 日 12:00-15:00	MCWW の NRW 削減活動ワークショップ	- メーター読み調査について（JICA 専門家の発表） - Shebeen 現場サイトツアー - 討議	• MCWW の C/P チーム • JICA 専門家	JICA 専門家
	2013 年 4 月 – 2015 年 4 月（第 3 期）				
4	2013 年 6 月 24～25 日 10:00-12:00	GHAPWASCO と MCWW の井戸施設 SOP 活動ワークショップ	- 第 3 期活動方針の発表（JICA 専門家の発表） - 討議	• GHAPWASCO の C/P チーム • MCWW の C/P チーム • JICA 専門家	JICA 専門家
5	2013 年 9 月 23 日 10:00-12:30	第 1 回 MCWW の 5 ヶ年計画 NRW 削減活動ワークショップ	- 5 ヶ年計画 NRW 削減活動の発表（MCWW の C/P チームの発表） - 討議	• MCWW の NRW チーム • MCWW の支局 NRW チーム	MCWW
6	2013 年 9 月 30 日 10:00-14:00	GHAPWASCO の 5 ヶ年計画 NRW 削減活動ワークショップ	- 5 ヶ年計画 NRW 削減活動の発表（GHAPWASCO の C/P チームの発表） - 討議	• GHAPWASCO の NRW チーム • GHAPWASCO の支所 NRW チーム	GHAPWASCO
7	2013 年 11 月 24 日 10:00-12:30	第 2 回 MCWW の 5 ヶ年計画 NRW 削減活動ワークショップ	- 5 ヶ年計画 NRW 削減活動の発表（MCWW の C/P チームの発表） - 討議	• MCWW の NRW チーム • MCWW の支所 NRW チーム	MCWW
8	2014 年 4 月 1～3 日、8～10 日、15 日、17 日 10:00 - 14:00	MCWW の NRW 削減活動ワークショップ	- 5 ヶ年計画から 1 年計画へ更新について - 各支所実施計画の説明及び討議 - 公開討議	• MCWW の本部 GIS 部、NRW 部 C/P チーム • 全支所の作業員	MCWW の本部 C/P チーム
9	2014 年 4 月 9 日	MCWW の NRW 削減活動ワ	- 1 年計画と 5 ヶ年計画の利点･欠点につい	• MCWW の NRW 部 C/P チーム	MCWW の本部 C/P チ

	開催日	タイトル	プログラム	参加者	トレーナー
	14:00 to 15:00	ークショップ	て	• 5 ヶ年計画支所作業員 • JICA 専門家	ーム
10	2014 年 6 月 4 日 10:00-15:00	SOP 活動ワークショップ	- 表流水浄水場の逆洗方法について	• MCWW の C/P チーム • JICA エジプト専門家	MCWW の本部 C/P チーム
11	2014 年 6 月 25 日 10:00-15:00	SOP 活動ワークショップ	- SOP 活動拡張について	• GHAPWASCO の C/P チーム • JICA エジプト専門家	GHAPWASCO の本部 C/P チーム
12	2014 年 7 月 7 日、14 日 10:00 - 12:00	SOP 活動ワークショップ	- 浄水施設の SOP 内容について	• MCWW の C/P チーム • JICA エジプト専門家	MCWW の本部 C/P チーム
13	2015 年 2 月 26 日 10:00 – 12:00	SHAPWASCO の WDM 活動ワークショップ	- WDM データ分析結果及び説明 - 平均給水量と時間最大需要、既存配水池の活用について	• SHAPWASCO 総裁. • 技術サポートセクター長 • Zagazig 北担当セクター長 • SHAPWASCO アドバイザー • Zagazig 浄水場長 • WDM 部長 • WDM 部技術者 • Zagazig 配水管理部長 • Zeraa 井戸部長 • Zagazig 東担当部長 • JICA 専門家	SHAPWASCO
14	2015 年 3 月 5 日 10:00 - 12:00	SHAPWASCO の WDM 活動ワークショップ	- WDM の配水監視システムとモニタリング活動からのアウトプットの説明 - WDM 機材サイトツアー - 討議	• SHAPWASCO の C/P チーム • Zagazig 西担当運転技術者 • JICA 専門家	SHAPWASCO
15	2015 年 3 月 15 日 10:30 - 11:30	SHAPWASCO の WDM 活動ワークショップ	- WDM の配水監視システムとモニタリング活動からのアウトプットの説明 - WDM 機材サイトツアー - 討議	• SHAPWASCO の C/P チーム • Zagazig 北担当運転技術者 • JICA 専門家	SHAPWASCO
16	2015 年 3 月 16 日 10:30 - 11:30	SHAPWASCO の WDM 活動ワークショップ	- WDM の配水監視システムとモニタリング活動からのアウトプットの説明 - WDM 機材サイトツアー - 討議	• SHAPWASCO の C/P チーム • Zagazig 南担当運転技術者 • JICA 専門家	SHAPWASCO

出典:JICA 専門家

第 10 章　課題と提言

第 3 章及び第 8 章で述べたとおり、本プロジェクトのプロジェクト目標は達成された。更に HCWW を筆頭とした SHAPWASCO、GHAPWASCO 及び MCWW の自助努力により、スーパーゴールへ向けたナイルデルタ全域へ向けた活動が踏み出されている。

上水道の運営維持管理能力の更なる向上や各地への展開に係る自助努力を補完するものとして、各上下水道公社に対する今後の課題と提言を述べる。

10.1　公社間共通の課題及び提言

第 4 章でも述べている HCWW 及び SHAPWASCO、GHAPWASCO、MCWW の 3 公社に係る共通の課題を、関連する提言も含め、以下のように要約する。

(1)　ナイルデルタ地域への技術展開

HCWW、SHAPWASCO、GHAPWASCO 及び MCWW の 3 公社には、プロジェクトで習得した技能・活動を県内全域に浸透・展開させ、更にはナイルデルタ全域へ技術展開を図る事が求められる。

SHAPWASCO、GHAPWASCO 及び MCWW の 3 公社は、他県の上下水道公社を支援するに必要な知識や経験、技術を有しており、他県への積極的な支援実施が望ましい。

そして、HCWW は、技術の全国展開に係る実施体制／管理体制作りを率先すべきである。効果的な展開活動を実施し、各公社の進捗を適切に管理するために、予算配賦や技術支援のみならず、目標やマイルストーンを設定する等の統括管理が必要である。

(2)　NOPWASD との情報共有

SOP、NRW 及び WDM のそれぞれの活動を通じて、施設運用者から見た上水道施設の設計上の問題や課題が、次第に明らかになってくると考えられる。施設設計に係る問題や課題は、次の施設設計に反映されるべきであるため、HCWW には、NOPWASD との定期的な協議が求められる。

HCWW は NOPWASD と定期的または必要に応じて各種協議をしているものの、協議の内容は、開発政策や投資計画等の政策的な一般事項になりがちで、設計の詳細を効果的に議論できる場ではない。したがって、より効果的に設計情報の伝達が行える仕組みを構築するべきである。

また、SHAPWASCO、GHAPWASCO 及び MCWW の 3 公社は、NOPWASD 関係者を現場に招待するなどの機会を設け、設計側と維持管理側の具体的な情報交換の促進に務めるべきである。

(3)　迅速な予算確保

SHAPWASCO、GHAPWASCO 及び MCWW の 3 公社は、本プロジェクトで、モデル施設／

地区やパイロット・プロジェクトでの活動資金を負担した。しかし、より広い範囲へ拡張して活動するためには、より多くの活動資金が必要になる。この資金確保は、3 公社にとって、プロジェクト活動を持続的に発展させるための課題である。

プロジェクト活動の継続・発展には、所定能力の確保や計器類改善のために施設修理やリハビリが必要である。改善活動を中断させないために、各 AC は、個別に予算請求・承認するのではなく、事前に一定の活動予算を確保しておくべきである。エジプト国の会計年度は 7 月から 6 月である。そのため、少なくとも半年前の 1 月頃から具体的な活動と予算を計画し、必要な金額の確保に努めるべきである。

10.2 SOP 活動に係る課題と提言

次の提言に基づき、HCWW と 3 公社が協力して SOP の全国展開を実施することが求められる。

(1) セミナー／ワークショップの定期的な開催

SOP の基本コンセプトを日常のルーチン作業の中に普及させていくためには、定期的なセミナーやワークショップの開催が効果的である。

(2) 職員の高齢化

GHAPWASCO 及び MCWW 職員の平均年齢は比較的高い。そのため、数年先には多くの退職者が出て、技術レベルが大きく低下する事が懸念される。若手スタッフの早期リクルートや育成を行い、ベテラン職員の知識・経験を伝承させる取り組みが求められる。

(3) 設備環境の管理

浄水施設の能力を最大限に発揮するために、機械・電気設備が正常に稼働していなければならい。このため、定期的なメンテナンスを実施すると共に、故障を回避する措置を事前に施す必要がある。また、軽微な故障や急な故障に対応するため、計画的に維持管理工具とスペアパーツを準備する必要がある。

(4) 計装機器の定期的な較正

SOP で重要視される活動の一つは、データに基づいた浄水効率の管理である。データは主に、流量計、水位計、圧力計等の計装機器から取得される。信頼できる測定結果を得るためには、計装機器の指示値が正確であることが重要であり、計装機器の較正は国際標準化機構により、ISO/IEC17025（試験所及び較正機関の能力に関する一般要求事項）で規定される。このため、同規定の要求に沿った計装機器の定期的較正が求められる。

(5) 竣工書類の引渡しと活用

GHAPWASCO 及び MCWW のほとんどの浄水施設では、設計計算書、竣工図、取扱説明書等の維持管理活動に重要な書類が工事業者から移管されていない。しばしば、これらの書類がどこに保管されているかもわからないケースがある。これらの書類は、浄水施設の維持管理のみならず、施設の効果を最大限発揮させるために不可欠なものであるため、施設の引渡しに関

する規定を見直す必要がある。

(6) 上下水道公社内の各部所間における相互連携

水質管理に係る活動では、C/P である技術者と中央試験室または水質試験部の分析員が相互連携を図りながら業務を実施した。これまで、横の連携（技術者⇔分析員間）が希薄だったが、相互連携の強化で、プロジェクトを成功裏に導くことができた。

この例のように、SOP 担当部門の中で、技能員、技術者と分析員が適切に連携できるシステムの確立が重要である。

10.3 NRW 削減活動に係る課題と提言

NRW 削減活動をナイルデルタ全域に波及させるためには、成功経験を共有することが重要である。そのため、以下の提言を参考に、NRW 削減活動の更なる発展や地域展開が実施されることが望ましい。

(1) 給水管工事の施工方法の標準化

NRW を削減するために重要な柱は、4 本と言われている。1) 積極的漏水調査、2) 修理の迅速さと正確さ、3) 水圧管理、および 4) アセットマネジメントの 4 つである。本プロジェクトでは、日本式の積極的漏水調査が各モデル地区で実施された。

修理の迅速さと正確さが、次の段階の課題である。本プロジェクトで発見した漏水の中には、ゴムバンドやビニールテープの応急処置だけのものも散見された。配管や修理方法の標準化や基準作成が必要である。なお、この基準には、漏水防止につながる埋戻しや転圧等の土工事の基準を含むべきである。

(2) 水道メータ維持管理方法の法制化

各モデル地区では精度の低い水道メータ、故障したままの水道メータ、汚れていて読むことができない水道メータが多く見られた。多くのメータが交換の必要性に迫られている。一方、現在の制度では、水道メータ設置費用の負担義務ならびにその所有権が居住者にあるため、上下水道公社の一存で交換することができない。これは、定期的交換に係る障害の一つである。そのため、所有権の移転を含めた新しい法制度や水道メータ管理規則の見直しが必要である。メータの交換は、使用水量や NRW の正確な計測に寄与する。

(3) 3 公社の協力体制とテクニカルワーキンググループの創設

本部と支所の協力体制は、NRW 削減活動を公社内に波及させるために重要な役割を担う。漏水探知活動を更にナイルデルタ全地域へ普及させるには、3 公社の協力なくしては実現出来ないと考えられる。

その背景の下、スーパーゴールを達成することを目的に、例として、HCWW 主導の以下のテクニカルワーキンググループを設置することが望まれる。

1. 給水管工事施工管理部門　この部門は漏水修理方法と水道メータの水平設置を含む給水

管工事施工の品質向上と GIS システムの更新を担当する。

2. 料金徴収システム部門　この部門は水道メータと料金徴収システムの改善を担当する。水道メータ検針時に漏水調査の実施を監視する。また、宅内漏水やトイレ内バルブの漏水対策を管工事施工管理部門に提案する。GIS をもとに検針し GIS 更新の不備を監査する。

3. 漏水対策部門　この部門は漏水調査の進捗管理、漏水発生原因の分析と対策を担当する。また、各戸漏水調査の際、水道メータの不備をチェックする。なお、GIS をもとに各戸漏水調査を実施し、GIS 更新の不備をチェックする。

上記のように相互補完する 3 つのテクニカルワーキンググループを創設することにより、HCWW は、各種基準作成に主導的に取り組むことになる。この活動は、NRW 対策活動の波及を促進する。

10.4　WDM 活動に係る課題と提言

WDM 活動の課題と提言を以下に述べる。提言の内容はエジプト国で全般的に言えるものであるが、SHAPWASCO の WDM 活動の展開に直接的に関与する事項である。

(1)　施設の維持管理・リハビリ

パイロットプロジェクトでは、監視モニターに表示される配水管網の圧力値に応じ、プロジェクトチームが浄水場や各井戸施設に対して配水量調整を指示した。しかし、ポンプ機材の急な点検、故障、またはその修理により、流量調整に即座に応じることが出来ない施設が散見された。配水施設は、常に設計能力を発揮できる状態にあることが必要なため、定期的な施設点検やリハビリにより、施設を常に適正かつ最適な状態に保つことが求められる。なお、施設能力の維持は配水管理の基本である。

(2)　配水能力

SHAPWASCO を含む各公社職員は、計画配水量を一日最大若しくは年間平均値で管理している。しかし、ピーク時の 1 時間当たりの需要量は、平均給水量や一日最大給水量よりもはるかに多い。プロジェクトチームは、ピーク時間帯における Zagazig 市の配水能力が不足しているため十分な量を配水できないことを認識している。これは、ポンプやバルブの操作では解決できるものではないため、WDM 活動と並行して、浄水施設や配水施設の能力を再検証することを提言する。

(3)　配水池の貯水量

10.5 章、表 10-1 で後述するとおり、配水池の貯水能力が小さい。Zagazig 市では 4 時間程度の容量しか確保されていない。そのため、浄水場は配水量と同じペースでの浄水を余儀なくされている。この運用は、浄水場の効率的な運用の面で不適切である。

夜間から早朝に掛けての配水量が少ない時間帯に浄水を配水池に貯留し、日中のピーク時間帯に貯留した浄水を配水する運用が必要である。日本水道協会発行の「水道施設設計指針」で

は、計画一日最大給水量の 12 時間分を確保できることと記載されているが、少なくとも 8 時間分の容量を確保した配水池の整備を提言する。

(4) 配水区画のブロック化

配水区画をブロック化し、ブロックごとに配水量管理することが配水管理の基本である。しかし、大半の都市部は古い街である上、ランダムに都市や配水管が拡張されてきたため、ネットワークを複数のブロックに分割することが困難である。

配水管理の展開には、ネットワークをいくつかのブロックに分割し、ブロック毎に送水管を設置することが求められる。これにより、ブロック毎の需要計算や配水量管理の実現できる。

(5) 監視システムの保守

中央監視システムは、機材と言うよりも、IT ネットワークの一つと言える。そのため、流量計や圧力計の定期的な較正だけではなく、ソフトウェアのアップグレードを含むシステムとしての総合的メンテナンスが求められる。このため、システム業者と保守契約を締結することが必要であり、保守契約の予算を運用段階で確保する必要がある。

10.5 浄水施設設計上の課題

SOP の目的は、施設の基本原理に忠実に運転することで運転効率を改善する事にある。本プロジェクトでは、主要な書類を SOP として纏め、SOP に基づいた OJT による技術移転活動を実施した。その結果、モデル施設の運転効率が改善した。

しかし、活動を実践する中で施設設計上の問題点が明らかになった。もし、浄水施設が適切に設計されていれば、より高い運転効率が確保できたと考えられる。改善すべき浄水施設設計上の課題及び提言は、以下のとおりである。

- **浄水場建設計画の現況**

SOP 活動を通じて、施設設計上の様々な問題点が明らかになった。特に MCWW における鉄・マンガン除去施設では、浄水過程に、塩素注入、曝気、過マンガン酸カリウム注入、沈澱／急速ろ過を取り入れている。鉄・マンガンの酸化には、薬品と曝気を併用しており、効率的なプロセスであるとは言い難い。更に、井戸ポンプの揚程が必要以上に大きく、電力消費量の削減を阻害する要因になっているものがある。早急に改善が必要な施設設計上の問題を表 10-1 に要約する。

一方、上述の鉄・マンガン除去施設では、運転維持管理に関するマニュアル類が建設者側から引き渡されていない。また、引渡し前に実施された OJT でも十分な施設運用指導が実施されていない。このため、設計者の意図する「最適な運転方法」が不明のまま運転が行われている。この背景の下、施設設計の問題点だけでなく、上水道施設の引き渡し条件に関しても改善が求められる。

- **浄水施設設計管理上の課題・提言**

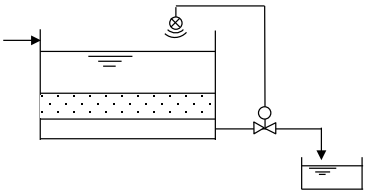
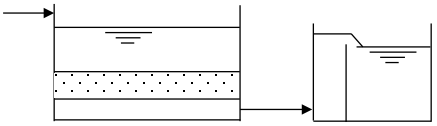
NOPWASD には高度な能力を持つ設計技術者がおり、浄水場の建設計画を行っている。しかし、浄水場の完成以降、運転・維持管理は各上下水道公社に引き継がれるため、運転・維持管

理上の問題点を認識する機会がほとんど無い。品質、経済性、維持管理性の面から、適正かつ最適な浄水施設を建設するためには、現場からの意見をフィードバックさせ、施設設計を見直すことが重要であり、このことは、NOPWASD の設計技術を更に向上させることに寄与する。

GHAPWASCO、MCWW 及び SHAPWASCO の 3 公社は、SOP 活動の実践により、施設設計上の問題に関する認識を十分に持っているため、NOPWASD との意見交流を先導すべき立場にある。定期的な意見交流を NOPWASD に働きかけ、設計のみならず、施工監理や施設引渡しに係る条件の協議を続けることが必要である。この活動は、設計及び運転・維持管理の両面で最適な浄水施設の建設に寄与する。

表 10-1　改善が必要な浄水施設設計上の課題・提言

No.	対象施設	施設設計上の問題点
1	鉄・マンガン除去施設	1) 井戸ポンプ能力の見直し（Gezy IMRP） 井戸ポンプの揚程が必要以上に大きく（井戸から市内へ直接配水できるような機種を選定していると思われる）、吐出弁で絞って運転しているため、電力を無駄に消費している。原水の水質から、浄水処理が必ず必要なたま、ポンプは、浄水プラントへ導水する能力があれば良い。ポンプの仕様を見直す必要がある。 井戸ポンプ仕様 現状の仕様　：25 L/sec x 90m 適正な仕様　：25 L/sec x 15-20m
		2) 処理プロセスの見直し（Gezy IMRP） MCWW 管内では、Gezy IMRP と同様の設計コンセプトを持つ複数の施設が建設中である。 本プロジェクトのモデル施設である Gezy IMRP の原水中に含まれる鉄マンガンの濃度は、鉄 2-3mg/L、マンガン 1mg/L 程度である。また、Shebeen El Kom 郡に建設された Kafr El Batanon IMRP では、鉄 0.7-1mg/L、マンガン 0.4mg/L 程度であった。この原水水質に対して、Gezy IMRP と同様の処理プロセスは、複雑かつ過剰設計である。適正な建設・維持管理コストにするために、今後の施設では、原水水質を見極めたうえで、それに応じた処理プロセスを選定すべきである。
		3) 汚泥の返送（Gezy IMRP） Gezy 鉄・マンガン除去施設では、沈澱池の堆積汚泥を反応槽に返送するシステムが組み込まれている。しかし、浄水処理は下水処理と異なり、化学反応を主要プロセスとするため、汚泥を返送しても、沈澱濁度を増加させるだけで、鉄・マンガン除去に効果はほとんどないと考えられる。このため、将来的には汚泥の返送システムを廃止したデザインに変更すべきである。
		4) ろ過池・ろ過器の逆洗方法の検証（Gezy IMRP/Mahalet Marhoom IMRP） ほとんどの鉄・マンガン除去施設には高架水槽が設けられている。現在のモデル施設では、ろ過池（若しくはろ過器）の逆洗に専用のポンプが使用されているが、電力消費量削減の観点から、高架水槽の水頭差を利用した逆洗を検討すべきである。
		5) 排水管設置レベルの変更（Gezy IMRP） Aeration tank、Reaction Tank 及び Sedimentation Tank の排水管設置レベルが底版より 10cm 以上上がった位置にあるため、槽内の水を完全に抜くことが出来ず、清掃時の水抜きに多大な労力を強いられている。今後の設計では、槽内の排水が完全に行われるレベルに排水管を設置すべきである。
2	表流水浄水場	1) ろ過流量調節（Tanta El Teraa El Melahia SWTP/ Mahatet El Sadat El Satheya SWTP） GHAPWASCO 及び MCWW の多くの表流水浄水場では、ろ過流量調節機構として、水位制御方式を採用している。しかし、水位制御方式は調節機構が

<table>
<tr><th>No.</th><th>対象施設</th><th>施設設計上の問題点</th></tr>
<tr><td></td><td></td><td>複雑になり、しばしば、水位計や PLC プログラムに問題が発生する。今後、施設を新たに建設する際には、運転管理が容易な自然平衡方式の採用を推奨する。
水位制御方式と自然平衡方式の概略は次の通りである。</td></tr>
<tr><td></td><td colspan="2"><table>
<tr><th></th><th>水位制御方式</th><th>自然平衡方式</th></tr>
<tr><td>名称</td><td>  </td><td>  </td></tr>
<tr><td>ろ過概要</td><td>ろ過池の水位を検知し、その信号を調節機構（流量調節弁）に伝達して、定速ろ過を維持する。</td><td>ろ過流出側に、砂面より高い位置に堰を設けることで、定速ろ過を維持する</td></tr>
<tr><td>特徴</td><td>制御が複雑になり、故障時の対応に時間を要する</td><td>複雑な機構を要さずに定速ろ過が可能である。</td></tr>
</table></td></tr>
<tr><td></td><td></td><td><u>2) 排水再利用システム（Mahatet El Sadat El Satheya SWTP）</u>
Mahatet El Sadat El Satheya 表流水浄水場における排水再利用システムは、ろ過池洗浄排水と天日乾燥床でろ過された水を排水槽に受入れて、返送する構造である。逆洗水は懸濁質を多く含むことから、排水池で懸濁質を沈降分離させて、上澄水のみを返送するシステムが好ましい。しかし、現状のシステムでは、タンク底版に近い位置に設置されたポンプで排水の返送を行うため、多くの懸濁質が分配井に流れ込み、効率的な排水再利用が出来ているとは言い難い。
したがって、今後、他の表流水浄水場へ排水再利用システムを計画する際には、上澄水返送用のポンプと堆積汚泥排出用のポンプを個別に設置して、効率的な返送が出来るシステムを構築すべきである。</td></tr>
<tr><td></td><td></td><td><u>3) 配水池容量（Tanta El Teraa El Melahia SWTP/ Mahatet El Sadat El Satheya SWTP）</u>
配水池は、配水量の時間変動を調節する機能が要求されており、日本水道協会発行の「水道施設設計指針」では、計画一日最大給水量の 12 時間分を確保できることと記載されている。しかし、GHAPWASCO 及び MCWW のモデル施設では、給水量に対して 3.5～5 時間程度しか配水池で確保できておらず、需要の変動に対して浄水場の運転を制御しなければならない状況が生じている。このため、今後建設される浄水施設には、配水量の時間変動を調節する機能を有する施設設計が求められる。</td></tr>
</table>

出典：JICA 専門家

添付資料

添付資料-1:　協議議事録（RD）
添付資料-2:　インセプション会議協議議事録
添付資料-3:　合同調整委員会（JCC）協議議事録
添付資料-4:　ステアリング・コミッティ（SC）協議議事録
添付資料-5:　プロジェクトチーム会議議事録
添付資料-6:　配水管理活動における方針会議協議議事録
添付資料-7:　中間レビュー調査協議議事録
添付資料-8:　終了時評価調査協議議事録
添付資料-9:　終了時評価調査（延長期間）協議議事録

添付資料-1:　協議議事録（RD）

RECORD OF DISCUSSIONS
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE ARAB REPUBLIC OF EGYPT
ON JAPANESE TECHNICAL COOPERATION
FOR
THE PROJECT FOR IMPROVEMENT OF
MANAGEMENT CAPACITY OF OPERATION AND MAINTENANCE FOR
WATER SUPPLY FACILITIES IN NILE DELTA AREA

Japan International Cooperation Agency (hereinafter referred to as "JICA") and Egyptian authorities concerned worked out the details of the technical cooperation program concerning the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area in the Arab Republic of Egypt.

JICA exchanged views and had a series of discussions with Egyptian authorities concerned with respect to desirable measures to be taken by JICA and the Government of the Arab Republic of Egypt for the successful implementation of the above-mentioned Project.

As a result of the discussions, and in accordance with the provisions of the Agreement on Technical Cooperation between the Government of Japan and the Government of the Arab Republic of Egypt, signed in Cairo on June 15, 1983 (hereinafter referred to as "the Agreement"), JICA and Egyptian authorities concerned agreed on the matters referred to in the document attached hereto.

Cairo, 19th August, 2010

Mr. Nobuhiro Ikuro
Chief Representative,
Egypt Office,
Japan International Cooperation Agency,
Japan

Dr. Abd El Kawi Khalifa
Chairman,
Holding Company for Water and Wastewater,
The Arab Republic of Egypt

Mr. Ibrahim Amasha
Chairman,
Sharkiya Potable Water and
Sanitation Company,
The Arab Republic of Egypt

Mr. Mohamed Osman Beshta
Chairman,
Gharbia Potable Water and
Sanitation Company,
The Arab Republic of Egypt

Mr. Ayman Abd Alkader Mahmoud
Chairman,
Minufia Potable Water and
Sanitation Company,
The Arab Republic of Egypt

HOLDING COMPANY FOR WATER AND WASTEWATER

資付1-1

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT

1. The Government of the Arab Republic of Egypt will implement the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (hereinafter referred to as "the Project") in cooperation with JICA.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provisions of the Article III of the Agreement, JICA, as the executing agency for technical cooperation by the Government of Japan, will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II. The provision of Article IV, V and VI of the Agreement will be applied to the above-mentioned experts.

2. PROVISION OF MACHINERY AND EQUIPMENT

JICA will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The provision of Article VII of the Agreement will be applied to the Equipment.

3. TRAINING OF EGYPTIAN PERSONNEL IN JAPAN

JICA will receive the Egyptian personnel connected with the Project for technical training in Japan.

HOLDING COMPANY FOR WATER AND WASTEWATER

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT

1. The Government of the Arab Republic of Egypt will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.

2. In accordance with the provision of Article III of the Agreement, the Government of the Arab Republic of Egypt will ensure that the technologies and knowledge acquired by the Egyptian nationals as a result of Japanese technical cooperation will contribute to the economic and social development of the Arab Republic of Egypt.

3. In accordance with the provision of Article IV, V and VI of the Agreement, the Government of the Arab Republic of Egypt will grant in the Arab Republic of Egypt privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families.

4. In accordance with the provisions of Article VII of the Agreement, the Government of the Arab Republic of Egypt will take the measures necessary to receive and use the Equipment provided by JICA under II-2 above and equipment, machinery and materials carried in by the Japanese experts referred to in II-1 above.

5. The Government of the Arab Republic of Egypt will take necessary measures to ensure that the knowledge and experience acquired by the Egyptian personnel from technical training in Japan will be utilized effectively in the implementation of the Project.

6. In accordance with the provision of Article IV-(b) of the Agreement, the Government of the Arab Republic of Egypt will provide the services of the Egyptian counterpart personnel of the Project and administrative personnel as listed in ANNEX IV.

7. In accordance with the provision of Article IV-(a) of the Agreement, the Government of the Arab Republic of Egypt will provide the building and facilities necessary for the Project as listed in ANNEX V.

8. In accordance with the laws and regulations in force in the Arab Republic of Egypt, the Government of the Arab Republic of Egypt will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided by JICA under II-2 above.

9. In accordance with the laws and regulations in force in the Arab Republic of Egypt, the Government of the Arab Republic of Egypt will take necessary measures to meet the running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. Chairman of the Holding Company for Water and Wastewater (hereinafter referred to as "HCWW") as the Project Director, will bear overall responsibility for the administration of the Project.

2. Head of Projects Sector of HCWW as the Project Manager will be responsible for the managerial matters of the Project.

3. Chairman of Sharkiya Potable Water and Sanitation Company (hereinafter referred to as "SHAPWASCO"), Chairman of Gharbia Potable Water and Sanitation Company (hereinafter referred to as "GAPWASCO") and Chairman of Minufia Potable Water and Sanitation Company (hereinafter referred to as "MUPWASCO") as the Project Co-Manager, will be responsible for technical matters and day-to-day implementation of the Project. In case the Adjunct Member who is responsible for the day-to-day management of the company is assigned, he or she will also be appointed as the Project Co-Manager on behalf of each Chairman.

4. The Japanese Team Leader will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.

5. The Japanese experts will give necessary technical guidance and advice to the Egyptian counterpart personnel on technical matters pertaining to the implementation of the Project.

6. For the effective and successful implementation of technical cooperation for the Project, Joint Coordinating Committee (hereinafter referred to as "JCC") and Steering Committee will be established whose functions and composition are described in Annex VI and VII.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by JICA and the Egyptian authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance of the provision of Article VI of the Agreement, the Government of the Arab Republic of Egypt undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Arab Republic of Egypt except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and the Government of the Arab Republic of Egypt on any major issues arising from, or in connection with this Attached Document.

VIII. MESURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of the Arab Republic of Egypt, the Government of the Arab Republic of Egypt will take appropriate measures to make the Project widely known to the people of the Arab Republic of Egypt.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be three (3) years from the date when the expert team arrives.

ANNEX I MASTER PLAN

1. Title of the Project

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

2. Super Goal

Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area

3. Overall Goal

Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates

4. Project Purpose

Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates

5. Outputs

1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened
2) Standard Operational Procedures (SOPs) are developed and utilized based on the experiences of SHAPWASCO at the model facilities in Gharbia and Minufia Governorates
3) The institutional skills and experiences of SHAPWASCO for Non-Revenue Water (NRW) reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model
0) The project is managed and coordinated properly

6. Activities

1) **Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened**

1-1 Conduct management training for the top management
1-2 Conduct Training of Trainers (TOT) for developing SOP
1-3 Conduct TOT for NRW reduction
1-4 Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GAPWASCO and MUPWASCO to the water supply companies in Nile Delta Area through reports and workshops

2) **SOPs are developed and utilized based on the experiences of SHAPWASCO at the model facilities in Gharbia and Minufia Governorates**

2-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates
2-2 Select 3 model facilities in Gharbia and Minufia Governorates
2-3 Organize SOP teams
2-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate
2-5 Revise SOPs of Sharkiya Governorate, if necessary
2-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO
2-7 Conduct On-the-Job Training for GAPWASCO and MUPWASCO to apply SOPs in operation and maintenance
2-8 Monitor the progress of SOP activities
2-9 Draft the policy/plan for disseminating SOP to the other Marakazes

3) **The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates**

3-1 Analyze the current situation on NRW in Gharbia and Minufia Governorates
3-2 Select 3 model areas for NRW reduction
3-3 Organize NRW reduction teams
3-4 Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO
3-5 Conduct training at Mostrod Training Center
3-6 Conduct training at the training yard in Sharkiya Governorate
3-7 Conduct training at model areas for water distribution management in Sharkiya Governorate

3-8 Prepare Geographical Information System (GIS) drawing for model areas in Gharbia and Minufia Governorates

3-9 Make water balance analysis at model areas

3-10 Conduct leakage detection survey at model areas

3-11 Make water balance analysis after repair works

3-12 Draft policy/plan for disseminating NRW reduction activities to the other Marakazes

4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model

4-1 Discuss methods and conduct survey for water distribution management

4-2 Conduct training for water distribution management

4-3 Formulate a plan for water distribution management

4-4 Install the equipment for water distribution management at the model area

4-5 Operate the system

4-6 Develop SOP for water distribution management

4-7 Evaluate the operation and SOP for water distribution management

0) The project is managed and coordinated properly

0-1 Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GAPWASCO and MUPWASCO

0-2 Discuss the contents, the manners for the cooperation among SHAPWASCO, GAPWASCO and MUPWASCO through the Steering Committee

0-3 Organize Joint Coordinating Committee (JCC) at least once a year

0-4 Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC

0-5 Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC

0-6 Monitor the progress of PO/APO and achievement of the Indicators of the PDM

ANNEX II LIST OF JAPANESE EXPERTS

1. Fields of Experts

1) Chief advisor/water supply planning
2) NRW reduction management
3) Leakage detection
4) Water treatment
5) Water quality
6) Electrical equipment
7) Mechanical equipment
8) Distribution network
9) Others (if necessary)

ANNEX III LIST OF MACHINERY AND EQUIPMENT

1. Machinery, equipment, tools and materials for NRW reduction and reinforcement of capacity of operation and maintenance for water supply facilities, as well as the machinery, equipment, tools and materials for water distribution management.

2. Other machinery, equipment and materials regarded as necessary for effective implementation of the Project by both sides.

Note:

1. The above mentioned equipment is limited to the equipment necessary for the transfer of technology by the Japanese experts.

2. The detailed specification of the above items will be decided through mutual consultations based on the annual plan of the Project, within the allocated budget of the Japanese fiscal year (start in April and end in March).

3. These machinery and equipment to be procured should be properly utilized and well maintained during and after the project period.

ANNEX IV LIST OF EGYPTIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Project Director

Chairman, HCWW

2. Project Manager

Head of Projects Sector, HCWW

3. Project Co-Manager

a. Chairman, SHAPWASCO
b. Chairman, GAPWASCO
c. Chairman, MUPWASCO

4. Project Personnel

1) SHAPWASCO

a. Chairman
b. Staff in charge of NRW reduction at headquarter
c. Engineers and technicians, NRW team at selected branch
d. Staff in charge SOP at headquarter
e. Engineers and operators, SOP team at selected branch
f. Staff in charge of water distribution management at headquarter
g. Engineers and operators, water distribution management team at selected branch

2) GAPWASCO

a. Chairman
b. Engineers and technicians nominated for NRW teams
c. Engineers and operators nominated for SOP teams

3) MUPWASCO

a. Chairman
b. Engineers and technicians nominated for NRW teams
c. Engineers and operators nominated for SOP teams

Note:

1. The Project Director will bear overall responsibility for administration of the Project. The Project Manager will be responsible for the managerial matters. The Project Co-Managers will be responsible for technical matters as well as day-to-day implementation of the Project.

2. Counterpart personnel will be added as the need arises for the smooth and effective implementation of the Project.

3. In case the Adjunct Member who is responsible for the day-to-day management of the company is assigned, he or she will also be appointed as the Project Co-Manager on behalf of the Chairman.

ANNEX V LIST OF BUILDINGS AND FACILITIES

1. Office space and facilities for the Japanese experts in SHAPWASCO, GAPWASCO and MUPWASCO

2. Rooms and facilities necessary for installation and storage of the equipment

3. Workshop and meeting rooms for the training

4. Other facilities mutually agreed upon as necessary

ANNEX VI JOINT COORDINATING COMMITTEE

1. Functions

The Joint Coordinating Committee will meet at least once in a year in order to fulfill the following functions:

1) To review the progress of the annual work plan;
2) To review and exchange opinions on major issues that may arise during the implementation of the Project;
3) To discuss any other issue(s) pertinent to the smooth implementation of the Project.

2. Composition

1) Chairperson:

Chairman, HCWW

2) Members of the Egyptian Side:

a. Head of Projects Sector, HCWW
b. Chairman, SHAPWASCO
c. Chairman, GAPWASCO
d. Chairman, MUPWASCO
e. Representative, Sharkiya Governorate
f. Representative, Gharbia Governorate
g. Representative, Minufia Governorate
h. Other personnel as required

3) Members of the Japanese Side:

a. Chief Representative, JICA Egypt Office
b. JICA Experts
c. Other personnel concerned, to be assigned by JICA, if necessary

Note:

1. Official(s) of the Embassy of Japan in the Arab Republic of Egypt may attend as observer(s).
2. In case the Adjunct Member who is responsible for the day-to-day management of the company is assigned, he or she can participate in the Joint Coordinating Committee on behalf of the Chairman.

ANNEX VII STEERING COMMITTEE

1. Functions

The Steering Committee will be organized in order to monitor/coordinate entire activities of the Project, and will be held whenever the necessity arises.

2. Composition

1) Chairperson:

Head of Projects Sector, HCWW

2) Members of the Egyptian Side:

a. Representative, HCWW
b. Chairman, SHAPWASCO
c. Chairman, GAPWASCO
d. Chairman, MUPWASCO
e. Other personnel as required

3) Members of the Japanese Side:

JICA Experts

Note:

In case the Adjunct Member who is responsible for the day-to-day management of the company is assigned, he or she can participate in the Steering Committee on behalf of the Chairman.

AMENDMET OF RECORD OF DISCUSSIONS

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT ON JAPANESE TECHNICAL COOPERATION

FOR

THE PROJECT FOR IMPROVEMENT OF MANAGEMENT CAPACITY OF OPERATION AND MAINTENANCE FOR WATER SUPPLY FACILITIES IN NILE DELTA AREA

Cairo, 19 December, 2013

Mr. Hideki Matsunaga
Chief Representative,
Egypt Office,
Japan International Cooperation Agency,
Japan

Mr. Mamdouh Raslan
Chairman,
Holding Company for Water and Wastewater,
The Arab Republic of Egypt

Ahmed Abdeen

Mr. Ahmed Abdeen

Chairman,
Sharkiya Potable Water and Sanitation Company,
The Arab Republic of Egypt

Ayman abd elKader

Mr. Ayman Abd Alkader Mahmoud
Chairman,
Gharbia Potable Water and Sanitation Company,
The Arab Republic of Egypt

EZZAT ELSAYAD

Mr. Ezzat El Sayad

Chairman,
Minufia Potable Water and Sanitation Company,
The Arab Republic of Egypt

AMENDMENT OF RECORD OF DISCUSSIONS

THIS AMENDMENT OF RECORD OF DISCUSSIONS, made and entered into on this 19 December, 2013 by and between the Japan International Cooperation Agency (hereinafter referred to as "JICA") and authorities concerned of the government of the Arab Republic of Egypt (hereinafter referred to as "Egyptian authorities") as the amendment of the original Record of Discussions on Japanese Technical Cooperation for the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta (hereinafter referred to as "the Project").

WITNESSETH

NOW, THEREFORE, the parties hereto hereby agree as follows:

1. "Article IV ADMINISTRATION OF THE PROJECT" , "ANNEX IV LIST OF EGYPTIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL", "ANNEX VI JOINT COORDINATING COMMITTEE" and "ANNEX VII STEERING COMMITTEE" in the original R/D shall be amended as follows;

   The words "Head of Projects Sector of HCWW" shall be deleted and "Vice Chairman of HCWW" shall be substituted in lieu thereof.

2. "Article IX. TERM OF COOPERATION" in the original R/D shall be amended as follows;

   The words "three (3) years" shall be deleted and "three (3) years and five (5) months" shall be substituted in lieu thereof.

3. All the other articles of the original record of discussion shall remain unchanged.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment of Record of Discussions to be signed, as of the day and year first above written, in their respective names in duplicate, each party retaining one (1) copy thereof.

(End)

ABDEEN

E.E.
Ayman

SECOND AMENDMENT OF RECORD OF DISCUSSIONS

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT ON JAPANESE TECHNICAL COOPERATION

FOR

THE PROJECT FOR IMPROVEMENT OF MANAGEMENT CAPACITY OF OPERATION AND MAINTENANCE FOR WATER SUPPLY FACILITIES IN NILE DELTA AREA

Cairo, 22th June , 2014

for

Mr. Hideki Matsunaga
Chief Representative,
Egypt Office,
Japan International Cooperation Agency,
Japan

Mr. Mamdouh Raslan
Chairman,
Holding Company for Water and Wastewater,
The Arab Republic of Egypt

AMENDMENT OF RECORD OF DISCUSSIONS

THIS AMENDMENT OF RECORD OF DISCUSSIONS, made and entered into on this 22 June, 2014 by and between the Japan International Cooperation Agency (hereinafter referred to as "JICA") and authorities concerned of the government of the Arab Republic of Egypt (hereinafter referred to as "Egyptian authorities") as the amendment of the Record of Discussions on Japanese Technical Cooperation for the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta (hereinafter referred to as "the Project").

WITNESSETH

NOW, THEREFORE, the parties hereto hereby agree as follows:

"Article IX. TERM OF COOPERATION" in the original R/D shall be amended as follows;

The words "three (3) years and five (5) months" shall be deleted and "four (4) years and one (1) month" shall be substituted in lieu thereof.

All the other articles of the original record of discussion shall remain unchanged.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment of Record of Discussions to be signed, as of the day and year first above written, in their respective names in duplicate, each party retaining one (1) copy thereof.

(End)

添付資料-2:　インセプション会議協議議事録

Minutes of Meeting
on
Inception Report
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Cairo, 25th of May 2011

Mr. El Sayed Nasr	Dr. Salah Bayoumi	Mr. Katsumi Fujii
Project Director	Project Manager	Chief Advisor
Chairman	Head of Project Sector	The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Holding Company for Water and Wastewater (HCWW)	Holding Company for Water and Wastewater (HCWW)	Japan International Coopcration Agency (JICA)

Mr. Ahmed Abdeen	Mr. Ayman Abd El Kader	Mr. Mohamed Abu El Khair
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater (MCWW)

資料2-1

Upon the commencement of the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (hereinafter referred to as "the Project"), Japan International Cooperation Agency (hereinafter referred to as JICA) expert team (hereinafter referred to as JET) headed by Mr. Katsumi Fujii, Chief Advisor of the Project, submitted an inception report (hereinafter referred to as IC/R). Concerned parties, which are shown on the cover page, discussed implementation plan of the Project from the 16th to 25th of May 2011 based on the presented IC/R. The all concerned parties agreed basically to the IC/R and prepared this document for confirmation.

The major points of discussion and agreement are summarized as follows:

1. Confirmation of Purpose and Schedule of the Project

All parties confirmed purpose and schedule of the Project as shown in Attachment-2 (Project Design Matrix: PDM) and Attachment-3 (Plan of Operation: PO), which are prepared based on Record of Discussion (hereinafter referred to as R/D) and Minutes of Meetings (hereinafter referred to as M/M) signed on the 19th of August 2010 between JICA and the Egyptian sides. All parties confirmed that contents of the mentioned R/D and M/M compose a base of the Project.

2. Names and Abbreviations of Companies

All parties confirmed that the following names and abbreviations should be used, instead of ones described in R/D:

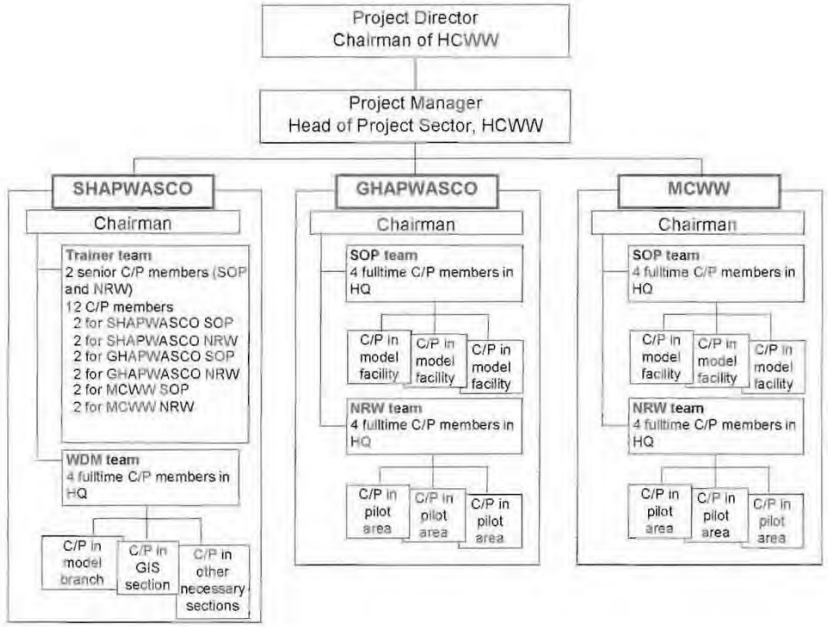
Description in R/D	To be used
Gharbia Potable Water and Sanitation Company (GAPWASCO)	Gharbia Potable Water and Sanitation Company **(GHAPWASCO)**
Minufia Potable Water and Sanitation Company (MUPWASCO)	**Minufia Company for Water and Wastewater (MCWW)**

3. Organization of the Project

All parties confirmed that the Egyptian side will establish the following counterpart (hereinafter referred to as C/P) organization:

1) Project Director: Chairman of HCWW
2) Project Manager: Head of Project Sector, HCWW
3) Project Co-Managers: Chairmen of SHAPWASCO, GHAPWASCO and MCWW
4) Other C/P personnel

Ayman



Remarks; SOP: Standard Operational Procedures
NRW: Non-Revenue Water
HQ: Headquarters
WDM: Water Distribution Management

4. Key Members in the C/P Team

All parties confirmed that key members of the C/P personnel are as shown below:

Organization	Leader for SOP	Leader for NRW Reduction	Leader of water distribution management
SHAPWASCO	Mr. Abd El Shafi Mohamed Mesafer	Mr. Saeed Mohamed Attia	Mr. Ahmed Maher El Bahnasawy
GHAPWASCO	Mr. Basiouny Essa	Mr. Ahmed Rabea	
MCWW	Mr. Ayman Bassuni	Mr. Belal Khalaf	

5. Project team

All parties confirmed that JET and C/P team will compose the Project team as follows:

Project team	JICA expert team (JET)	JICA experts Local experts employed by JICA expert Facilitators employed by JICA expert Supporting staff members employed by JICA expert
	Counterpart team (C/P team)	Selected staff members of SHAPWASCO, GHAPWASCO, MCWW

HCWW will play a role of coordinator for the Project to establish inter-company cooperation and to complete the Project successfully.

6. Principles of the Project Execution

All parties confirmed that the following are principles to execute the Project:

1) JET and the mentioned C/P organization will conduct the Project jointly.
2) JET will undertake facilitation and assistance for the Project through dispatching experts and providing necessary equipment.
3) The Project will be managed by Joint Coordinating Committee (hereinafter referred to as JCC) and Steering Committee, which are described in R/D, M/M and IC/R.
4) To improve activity of SOP and NRW reduction for GHAPWASCO and MCWW, SHAPWASCO will provide trainers, lectures, etc. with JET.
5) To have model activity of water distribution management, SHAPWASCO will improve system of water distribution management under facilitation and assistance of JET.
6) To develop inter-company cooperation, HCWW will coordinate activities of Potable Water and Sanitation Companies in Egypt and facilitate information exchange.
7) To conduct the mentioned activity smoothly, JET will provide facilitation works and technical assistances.

7. Capacity Development through Model Facilities/Area

The Project team will conduct capacity development through model/pilot projects system. The Project team will select model facilities/areas for SOP and NRW reduction in each of GHAPWASCO and MCWW and a pilot project area for water distribution management in SHAPWASCO. The model/pilot facilities/areas will be selected by the Project team in a process of field survey and discussions to be conducted in the Project. All parties agreed basically the number of model/pilot facilities/areas as follows:

Companies	SOP	NRW reduction	Water Distribution Management
SHAPWASCO	-	-	To be decided later
GHAPWASCO	3	3	-
MCWW	3	3	-

8. Selection Criteria of SOP model facilities

All parties agreed on the following items as selection criteria of SOP model facilities and to consider lessons learnt in the previous project for SHAPWASCO:

1) Variety of types for facilities such as treatment plant, iron-manganese removal, well, etc.

2) Easiness to evaluate current efficiency.
3) Easiness to determine target efficiency.
4) Willingness of staff members to improve efficiency.
5) Applicability to other facilities.
6) Distance between model facilities to keep better accessibility for SOP team members.

9. Selection Criteria of model areas for NRW reduction

All parties agreed on the following items as selection criteria of model areas for NRW reduction activities and to consider lessons learnt in the previous project for SHAPWASCO:

1) Minimum night flow representing candidate areas.
2) Having diverse customers (for example, governmental offices, schools and hospitals).
3) Number of water connections (approximately 500 - 1,500).
4) Number of mal-functioning meters is not expected in large.
5) The average service pressure is at least 1.5 bars.
6) Easiness to construct chambers for equipment installation.
7) Easiness to isolate by valves.

10. Selection Criteria of pilot area for water distribution management

All parties agreed on the following items as selection criteria of pilot area for water distribution management:

1) Distribution volume and demand are balanced.
2) An area can be hydraulically isolated by valves.
3) Applicability to other areas.
4) An area where NRW reduction activity was conducted.
5) Easiness to install equipment.
6) Distance from Zagazig.

11. Cooperation of SHAPWASCO to GHAPWASCO and MCWW

All parties agreed that SHAPWASCO will provide the following to GHAPWASCO and MCWW. Details of the provision, as well as cost sharing, will be discussed in the Project team and at the Steering Committee. SHAPWASCO will submit a plan of provisions by the 1st JCC.

1) To hold presentation lectures on experience of SOP and NRW reduction activities.
2) To disclose all procedures until improvement achieved.
3) To dispatch trainers to GHAPWASCO and MCWW for SOP and NRW reduction.
4) To receive trainees form GHAPWASCO and MCWW for SOP and NRW reduction.

12. Utilization of Mostrod Training Center

HCWW will facilitate utilization of the Mostrod training center, Cairo Potable Water Company, if necessary.

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13. Issue of Water Distribution Management

All parties agreed that the following issues should be taken into consideration for activities in

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SHAPWASCO:

1) To monitor flow, pressure, quality, etc. of distributed water in water distribution networks.
2) To analyze data of distributed water and consumption in order to grasp water balance in water distribution networks.
3) To modify operation of water distribution according to the analysis.

14. Annual Plan of Operations

JET proposed a draft Annual Plan of Operations (hereinafter referred to as APO) for Phase-1. Discussion was held on the draft APO. As a result of discussion, the draft APO was accepted as Tentative APO, which will be finally approved by the 1st JCC. It is shown in Attachment-6.

15. Indicators to Monitor/Evaluate the Project

The Project team will propose indicators to monitor/evaluate the Project in a process of field survey to be conducted in the Project. It will be presented in the 1st JCC for approval. Approved indicators will be revised at the 2nd JCC, if necessary.

16. Securing Smooth Implementation of the Project

As mentioned in PDM, for the smooth implementation of the Project, it is important that "Employees who received trainings by the Project will continuously work for SHAPWASCO, GHAPWASCO, and MCWW" and "Personnel transfer of executive management will not affect the implementation of the Project". To overcome these issues, the Egyptian side agreed to conduct the following:

1) To keep assignment of C/P members for the Project period.
2) To assign plural staff members for the same activity.
3) To assign responsible persons to the JCC and the Steering Committee, in addition to Chairman.

It is mentioned in PDM as a pre-condition that "Budget for human resources development (HRD) is allocated properly to SHAPWASCO, GHAPWASCO and MCWW by HCWW". In this regard, the Egyptian side agreed to make the following efforts:

1) To provide necessary budget for HRD as well as for the Project.
2) To keep each other informed on cost sharing.
3) To disclose information of budget allocation to the Japanese side.

17. Undertakings by the Egyptian side

All parties agreed on, as a result of discussion, the items shown in Attachment-4 as undertakings to be conducted by the Egyptian side.

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18. Equipment

All parties agreed items and numbers of the equipment to be provided by JICA and JET as shown in Attachment-5. The following are particular results of the discussions.

1) The equipment for NRW activities is basically the same as previous technical cooperation project in SHAPWASCO to keep training by SHAPWASCO easier. However, JET will check specifications of the equipment, especially water pressure recorder, and submit a final list to the

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Steering Committee for approval.

2) The details of equipment for water distribution network management in Sharkiya will be discussed during Phase-1 of the Project and will be finally determined by JICA HQ.

19. Counterpart Training in Japan

JICA is planning to conduct C/P training in Japan, dividing into four categories, i.e. 1) Management, 2) SOP, 3) NRW reduction and 4) Water distribution management. All parties agreed preliminary plan and to consider it further on the following points:

1) Availability of Japanese agencies of water sector, which can extend assistance in training.
2) The participants of the course for Management training will be Chairmen of the companies. When a Chairman is not available to participate in the training, he will assign a substitute considering the sustainability of the Project.
3) Training needs of C/P agencies, including HCWW, and candidate participants of the training courses.
4) Steering Committee will evaluate candidates and approves participants of the training courses.
5) For sustainability of the Project, JICA expressed its request that a training courses participant should be expected to be engaged in organization for a long time to perform the training results.
6) The Egyptian side requested JET to increase number of trainees from two to four persons for the course of Water distribution management.

20. The 1st JCC

All parties agreed that the 1st JCC is scheduled for September 2011 to confirm and discuss the following:

1) To present status of SOP, NRW and water distribution management
2) To confirm the progress until the JCC and to discuss activities to be made in later stages.
3) To discuss and approve APO.
4) To discuss and determine indicators for the Project monitoring and evaluation.
5) To discuss revision of PDM and PO.
6) Other necessary topics.

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ATTACHMENT

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Draft Project Design Matrix (PDM$_1$)

Dated August 11,

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area — Duration : FY2010-FY201

Project Site : Sharkiya Governorate, Gharbia Governorate, Minufia Governorate (Nile Delta Area) — Target Group : Staff of SHAPWASCO, GAPWASCO, MUPWA

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumpt
【Super Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area	Performance Indicators (PIs) in the fields of management capacity of operation and maintenance are improved in Nile Delta Area	Quarterly Reports of all water supply companies in Nile Delta Area submitted to HCWW	
【Overall Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia and Minufia Governorates	Quarterly reports of SHAPWASCO, GAPWASCO and MUPWASCO	Central and local gover budget for development of supply facilities is allo appropriately
【Project Purpose】 Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved at the model areas/facilities	Quarterly reports of SHAPWASCO, GAPWASCO and MUPWASCO	Governmental policy on supply sector does not c significantly.
【Output】 1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened	a. More than ** members each of SOP/NRW teams in SHAPWASCO・GAPWASCO・MUPWASCO are certified as trainers by Steering Committee b. More than ** % of participants rates satisfaction and understanding of workshops more than ** on the 5-scale evaluation	a. Certification of Training b,c. Reports of workshops	
2) Based on the experiences of SHAPWASCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates	a. More than ** % of SOP team members rates understanding of trainings more than ** on the 5-scale evaluation b. The model facilities are operated and maintained based on SOP	a, b. Project Progress Reports	Employees who re trainings by the Projec continuously work SHAPWASCO, GAPW and MUPWASCO
3) The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates	a. More than ** % of NRW teams members rates understanding of trainings more than ** on the 5-scale evaluation b. Water balance analysis is conducted properly for the 3 model areas c. ** % of detected leakage is repaired at the model area	a,b. c Project Progress Report	
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model	Water distribution is managed based on SOP at the model areas	Project Progress Reports	Personnel transfer of exe management will not affe Implementation of the Proj
5) The project is managed and coordinated properly	a. Agreement on the cooperation among SHAPWASCO・GAPWASCO・MUPWASCO is prepared b. Project activities are regularly monitored based on PO/APO	a. Agreement Document b. Project Progress Reports	

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List of Participant

[Egyptian side]	
Mr. El Sayed Nasr	Chairman of HCWW
Mr. Maudouh Raslan	Vice Chairman of HCWW
Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahaed Abdeen	Chairman of SHAPWASCO
Mr. Mohamed Abd El Aleem	Vice Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Abd Alla El Liethy	Vice Chairman of GHAPWASCO
Mr. Mohamed Abu El Khair	Chairman of MCWW
Mr. Mohamed Nageb Saleh	Vice Chairman of MCWW
[Japanese side]	
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Masahiro Takeuchi	Distribution Network (1)
Mr. Tomohiro Shimizu	Water treatment system
Mr. Atsushi Kato	Coordinator / Assistant for NRW Reduction Activity
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Yoshiki Omura	Leader, Monitoring mission of JICA
Mr. Ryusuke Ikeda	Study planning, Monitoring mission of JICA
Mr. Shigeru Otake	Senior Representative, JICA Egypt office
Mr. Nour El-Din Hussein	Senior Program Officer, JICA Egypt office

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Activities	Inputs	Important Assump
1-1 Conduct management training for the top management 1-2 Conduct Training of Trainers (TOT) for developing SOP 1-3 Conduct TOT for NRW reduction 1-4 Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GAPWASCO and MUPWASCO to the water supply companies in Nile Delta Area through reports and workshops 2-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates 2-2 Select 3 model facilities in Gharbia and Minufia Governorates each 2-3 Organize SOP teams 2-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate 2-5 Revise SOPs of Sharkiya Governorate, if necessary 2-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO 2-7 Conduct On-the-Job Training for GAPWASCO and MUPWASCO to apply SOPs in operation and maintenance 2-8 Monitor the progress of SOP activities 2-9 Draft the policy/plan for disseminating SOP to the other Marakazes 3-1 Analyze the current situation on NRW in Gharbia and Minufia Governorates 3-2 Select 3 model areas for NRW reduction in Gharbia and Minufia Governorates each 3-3 Organize NRW reduction teams 3-4 Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO 3-5 Conduct training at Mostrod Training Center 3-6 Conduct training at the training yard in Sharkiya Governorate 3-7 Conduct training at model areas for water distribution management in Sharkiya Governorate 3-8 Prepare GIS drawing for model areas in Gharbia and Minufia Governorates 3-9 Make water balance analysis at model areas 3-10 Conduct leakage detection survey at model areas 3-11 Make water balance analysis after repair works 3-12 Draft policy/plan for disseminating NRW reduction activities to the other Marakazes 4-1 Discuss methods and conduct survey for water distribution management 4-2 Conduct training for water distribution management 4-3 Formulate a plan for water distribution management 4-4 Install the equipment for water distribution management at the model area 4-5 Operate the system 4-6 Develop SOP for water distribution management 4-7 Evaluate the operation and SOP for water distribution management 0-1 Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GAPWASCO and MUPWASCO 0-2 Discuss the contents, the manners for the cooperation among SHAPWASCO, GAPWASCO and MUPWASCO through the Steering Committee 0-3 Organize JCC at least once a year 0-4 Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first Joint Coordinating Committee (JCC) 0-5 Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC 0-6 Monitor the progress of PO/APO and achievement of the Indicators of the PDM	**Japanese side** 1) Japanese Experts • Chief advisor/water supply planning • NRW reduction management • Leakage detection • Water treatment • Water quality • Electrical equipment • Mechanical equipment • Distribution network • Others (if necessary) 2) Local Experts 3) Equipment 4) Training in Japan 5) Local Cost **Egyptian Side** 1) Counterpart Personnel • Project Director : Chairman, HCWW • Project Manager : Chairman, SHAPWASCO • Co-Project Manager : Chairman, GAPWASCO Chairman, MUPWASCO • NRW Team • SOP Team 2) Office space and facilities for experts 3) Equipment 4) Necessary information 5) Local Cost	【Pre-condition】 Budget for HRD is allo properly to SHAPWA GAPWASCO and MUPW by HCWW

Attachment-3

Dated August 11, 20

Tentative Plan of Operation (PO)

Item	Year 1				Year 2				Year 3				Person in Charge	Major Input		Remarks
	1	2	3	4	1	2	3	4	1	2	3	4		Japan	Egypt	
1. Human Resource Development through coordination among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened																
1-1 Conduct management training for the top management			★										HC, SH, G, M	☆Training in Japan		
1-2 Conduct Training of Trainers (TOT) for developing SOP		■		☆							■		SH, G, M	JICA Experts Local Experts ☆Training in Japan		Year 1: Mainly for SH
1-3 Conduct TOT for NRW reduction		■		☆							■		SH, G, M	JICA Experts Local Experts ☆Training in Japan		Year 3: Mainly for G, M
1-4 Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GAPWASCO and MUPWASCO to the water supply companies in Nile Delta Area through reports and workshops	■						■		■		■		HC, SH, G, M	JICA Experts		
2. Based on the experiences of SHAPWASCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates																
2-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates			■	■									G, M	JICA Experts	SH	
2-2 Select 3 model facilities in Gharbia and Minufia Governorates each			■	■									G, M	JICA Experts	SH	
2-3 Organize SOP teams			■	■									G, M	JICA Experts	SH	
2-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate			■	☆			■						G, M	JICA Experts ☆Training in Japan	SH	
2-5 Revise SOPs of Sharkiya Governorate, if necessary			■	■	■								G, M	JICA Experts	SH	
2-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO			■	■	■	■	■	■	■	■	■		G, M	JICA Experts	SH	
2-7 Conduct On-the-Job Training for GAPWASCO and MUPWASCO to apply SOPs in operation and maintenance						■		■		■		■	G, M	JICA Experts	SH	

2-8	Monitor the progress of SOP activities	G, M	JICA Experts	SH	
2-9	Draft the policy/plan for disseminating SOP to the other Marakazes	G, M	JICA Experts	SH	
3.	**The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minuf Governorates**				
3-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates	G, M	JICA Experts	SH	
3-2	Select 3 model areas in Gharbia and Minufia Governorates each	G, M	JICA Experts	SH	
3-3	Organize NRW reduction teams	G, M	JICA Experts	SH	
3-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO	G, M	JICA Experts	SH	
3-5	Conduct training at Mostrod Training Center	G, M	JICA Experts	Mostrod Training Center	
3-6	Conduct training at the training yard in Sharkiya Governorate	G, M	JICA Experts ☆Training in Japan	SH	
3-7	Conduct training at model areas for water distribution management in Sharkiya Governorate	G, M	JICA Experts	SH	
3-8	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates	G, M	JICA Experts	SH	
3-9	Make water balance analysis at model areas	G, M	JICA Experts	SH	
3-10	Conduct leakage detection survey at model areas	G, M	JICA Experts	SH	
3-11	Make water balance analysis after repair works	G, M	JICA Experts	SH	
3-12	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes	G, M	JICA Experts	SH	

4.	**The water distribution management capacity is improved in Sharkiya Governorate as an advanced model**				
4-1	Discuss methods and conduct survey for water distribution management	SH	JICA Experts		
4-2	Conduct training for water distribution management	SH	JICA Experts ☆Training in Japan		
4-3	Formulate a plan for water distribution management	SH	JICA Experts		
4-4	Install the equipment for water distribution management at the model area	SH	JICA Experts		
4-5	Operate the system	SH	JICA Experts		
4-6	Develop SOP for water distribution management	SH	JICA Experts		
4-7	Evaluate the operation and SOP for water distribution management	SH	JICA Experts		
0.	**The project is managed and coordinated properly**				
0-1	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GAPWASCO and MUPWASCO	HC, SH, G, M	JICA Experts		
0-2	Coordinate among SHAPWASCO, GAPWASCO and MUPWASCO through the Steering Committee	HC, SH, G, M	JICA Experts		
0-3	Organize the Joint Coordinating Committee (JCC) meeting at least once a year	HC, SH, G, M	JICA Experts		
0-4	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC	HC, SH, G, M	JICA Experts		
0-5	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC	HC, SH, G, M	JICA Experts		
0-6	Monitor the progress of PO/APO and achievement of the Indicators of the PDM	HC, SH, G, M	JICA Experts		●Mid-Term Review ▲Final Evaluation

Attachment-4 : Undertakings by the Egyptian Side

The following are items to be undertaken by the Egyptian side, in addition or in detailed to items listed in R/D signed on the 19th of August 2010.

1) The Egyptian side should provide enough office space for the Project and necessary office facilities such as furniture, telephone set and telephone line including cost for installation.

2) The Egyptian side should bear necessary costs of NRW reduction activities such as repair of leakage, replacement of water meters, installation of flow meters, construction of chambers, night job allowances for leakage detection survey, etc. The Egyptian side should provide necessary labors, equipment and materials for the mentioned works, other than provided by JICA and/or JET.

3) The Egyptian side should bear necessary costs of SOP activities such as installation of flow meters, construction of chambers and upgrading facilities in case of necessity. The Egyptian side should provide necessary labors, equipment and materials for the mentioned works, other than provided by JICA and/or JET.

4) The Egyptian side should bear necessary costs of distribution management activities such as installation (civil/electrical/mechanical works) of monitoring system instruments and/or equipment provided by JICA and/or JET. The Egyptian side should provide necessary labors, equipment and materials for the mentioned works, other than provided by JICA and/or JET.

5) The Egyptian side should bear necessary costs of trausportation, accommodation and daily allowances for C/P members when they conduct the activities at the other water companies.

6) The Egyptian side should bear necessary costs of pickup operation, driver's allowances and fuel. The Egyptian side should also provide the parking space of the pickup cars for the Project.

7) The Egyptian side should undertake customs clearance and in-land transportation of the equipment, at own budget, for the equipment to be provided by JICA and/or JET, if requested by JICA and/or JET.

8) The Egyptian side should manage all the equipment to be provided by JICA and/or JET after delivery and utilize it effectively for the Project and SOP/NRW/Distribution management business for future. The cost for consumables and spare parts of the equipment including operation after the providing to the Egyptian side should be borne by the Egyptian side at own budget. The Egyptian side should also provide the storage space of the equipment for the Project.

9) The Egyptian side should secure halls/places for meetings, seminars, workshops, water saving campaign, etc. The Egyptian side should bear necessary cost for public relations such as media and printing of newsletter.

10) The Egyptian side should arrange appointments with officials, permissions, etc.

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Attachment-5 : Provision of Equipment

A. Equipment to be provided by JET

	Name of Equipment	Specification / Reference brand	Quantity			Procurement Location
			SHAP	GHAP	MCWW	
1	Water leak detector	1. Specification (Frequency range) 100Hz to 1200Hz or equivaleut 2.Reference brand Fuji Tecom HG-10AII	-	3	3	Japan
2	Digital sound detector	1.Specification (Frequency range) 100Hz to 2000Hz or equivalent 2.Reference brand Fuji Tecom FSB-8D	-	2	2	Japan
3	Acoustic rod	1.Specification (Length) approx 1,500mm 2.Reference brand Fuji Tecom LS-1.5	-	4	4	Japan
4	Water pressure recorder	1.Specification (Measurement pressure) 1.0MPa 2.Reference brand Fuji Tecom FJN501	-	3	3	Japan
5	Pipe and cable locator	1.Specification (Detection depth) approx 5m 2.Reference brand Fuji Tecom PL-960	-	2	2	Japan
6	Metal pipe locator	1.Specification (Detection depth) approx 40cm 2.Reference brand Fuji Tecom F-90M	-	2	2	Japan
7	Non metallic pipe vibrator	1.Specification (Composition) Cylinder, hose, hammer 2.Reference brand Tokio Rhythm	-	2	2	Japan
8	Hammer drill	1.Specification (Drill bit) Max., (Voltage) 200V 2.Reference brand Hitachi PR-38E	-	2	2	Japan
9	Drill bid	1.Specification (Length) more than 800mm, (Edge diameter) 19mm 2.Reference brand Yunika 19mm x 800mm	-	8	8	Japan
10	Boring bar	1.Specification (Diameter) 16mm, (Material) Metal 2.Reference brand Fuji Tecom boring bar L=1m	-	2	2	Japan
11	Generator	1.Specification (Power) approx 4kW 2.Reference brand Kubota 3.8kW	-	2	2	Egypt
12	Water level indicator	1.Specification (Data storage) Memory card type, (Display) Digital type 2.Reference brand CTI Science RT510-W	-	3	3	Japan

Note : SHAP: SHAPWASCO, GHAP: GHAPWASCO

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Attachment-5 : Provision of Equipment

B. Equipment to be provided by JICA

	Name of Equipment	Specification/ Reference brand	Quantity			Procurement Location
			SHAP	GHAP	MCWW	
1	Leak sound detector	1.Specification (Composition) Main body, preamplifier, pickup censer 2.Reference brand Fuji Tecom FSB-LC-2500	-	2	2	Japan
2	Portable ultrasonic flow meter (For large diameters)	1.Specification (Diameter) 300-2000mm or equivalent (Pipe material) steel, stainless steel, cast iron, PVC, etc. 2.Reference brand Tokyo Keiki UF-30	-	3	3	Japan
3	Portable ultrasonic flow meter (For normal diameters)	1.Specification (Diameter) 20-500mm or equivalent (Pipe material) steel, stainless steel, cast iron, PVC, etc. 2.Reference brand Tokyo Keiki UF-20	-	2	2	Japan
4	Ultrasonic flow meter for distribution management	Under consideration (Specification will be set in Phase-1)	See remark	-	-	Japan
5	Water pressure recorder for distribution management	Under consideration (Specification will be set in Phase-1)	See remark	-	-	Japan
6	Turbidity meter for distribution management	Under consideration (Specification will be set in Phase-1)	See remark	-	-	Japan
7	Residual chlorine measurement for distribution management	Under consideration (Specification will be set in Phase-1)	See remark	-	-	Japan
8	Instrumentation monitoring system	Under consideration (Specification will be set in Phase-1)	See remark	-	-	Japan
9	Pickup	1.Specification (Type) 2500CC Diesel 4Cylender 2.Reference brand Chevrolet TFR Model 2010 2WD	-	1	1	Egypt
10	Personal computer (Desk top)	1.Specification (Type) CPU: core-i5, memory:4GB, Hard disk:500GB, including software (MS offices, security soft) 2.Reference brand HP Elite	-	1	1	Egypt
11	Personal computer (Notebook)	1.Specification (Type) CPU: core-i5, memory:4GB, Hard disk:320GB, including software (MS offices, security soft) 2.Reference brand DELL Inspiron 1564	-	2	2	Egypt
12	Copy and Fax machine	1.Specification (Type) Black and white, Paper maximum A3, Network printer/scan 2.Reference brand Xerox Work Centre 5225	-	1	1	Egypt
13	Ultrasonic flow meter	1.Specification (Diameter) 200-6000mm or equivalent (Pipe material) steel, stainless steel, cast iron, vinyl-chloride, etc 2.Reference brand GE AT868	-	See remark	See remark	Japan
14	Software (Water CAD)	1.Specification (Type) Stand alone, (Max pipe number) unlimited 2.Reference brand Bentley Water CAD	-	1	1	Japan

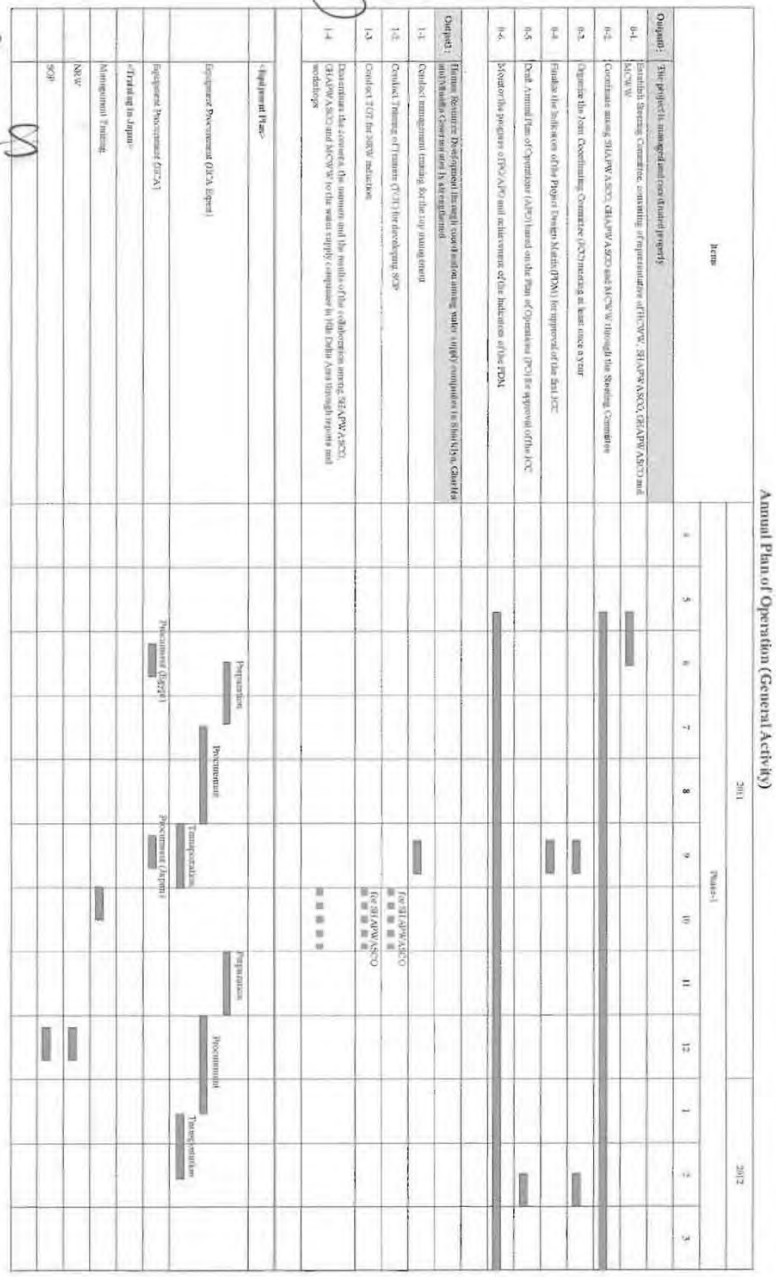
Note : SHAP: SHAPWASCO, GHAP: GHAPWASCO
Remark : To be decided later.

資料2-9

A-10

Attachment-6 : Tentative Annual Plan of Operation

Annual Plan of Operation (General Activity)



Annual Plan of Operation (Development of SOP)

Item	2011 Phase-1 4	5	6	7	8	9	10	11	12	2012 1	2	3
Based on the experiences of SHAPWASCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates												
Action-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates												
1-1 Survey for the water treatment facilities												
1-2 Survey for the iron/ manganese removal facilities												
1-3 Survey for well facilities												
Action-2 Select 3 model facilities in Gharbia and Minufia Governorates each												
2-1 Discussion on the selection criteria												
2-2 Compiling the survey report and long list												
2-3 Selection of model facilities (Discussion with OP)												
2-4 Final selection of model facilities												
Action-3 Organize SOP teams												
3-1 Selection of fulltime SOP member in SHAPWASCO and MCWW												
3-2 Selection of OP member in model facilities												
3-3 Selection of trainee in SHAPWASCO												
Action-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate												
4-1 Assessment of the effectiveness of SOPs in Sharkiya Governorate												
Action-5 Revise SOPs of Sharkiya Governorate, if necessary												
5-1 Revision of SOPs of Sharkiya Governorate												
Action-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO												
6-1 Preparation of basic system drawings (P&ID, Single line diagram)												
6-2 Examination of water quality management												
6-3 Preparation of draft SOPs with site training												
6-4 Preparation of unified forms of O&M records and reports												
6-5 Trial operation with the use of draft SOPs												

Problem analysis
Formulation of activity plan

A-11

Annual Plan of Operation (NRW Reduction)

Items	2011 Phase-1 4	5	6	7	8	9	10	11	12	2012 1	2	3
The facilitation of skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams in the model areas in GharMa and Minufia Governorates												
Action-1 Analyze the current situation on NRW in Gharbia and Minufia Governorates												
1-1 Survey for the actual condition regarding water distribution network (data collecting)												
1-2 Analysis of the balance between water distribution amount and water consumption												
1-3 Compiling the result of analysis												
Action-2 Select 3 model areas in Gharbia and Minufia Governorates each												
2-1 Discussion on the selection criteria												
2-2 Arrangement of long list												
2-3 Selection of model area (Discussion with OP)												
2-4 Final selection of model area												
Action-3 Organize NRW reduction teams												
3-1 Selection of fulltime NRW member in SHAPWASCO and MCWW												
3-2 Selection of OP member in model area												
3-3 Selection of trainee in SHAPWASCO												
Action-4 Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO												
4-1 Re-examination of action plan in Sharkiya Governorate												
4-2 Planning of action plan												
4-3 Finishing of action plan												
Action-5 Conduct training at Monfred Training Center												
5-1 Training at Monfred Training Center												
Action-6 Conduct training at the training yard in Sharkiya Governorate												
6-1 Training on water leakage survey and water leakage detection equipments at the training yard in Sharkiya Governorate												
Action-7 Prepare GIS drawing for model areas in Gharbia and Minufia Governorates												
7-1 Preparation of GIS drawing on model area-1												
7-2 Preparation of GIS drawing on model area-2												
Action-8 Make water balance analysis at model areas												
8-1 Minimum night flow survey												
8-2 Data analysis												

Problem analysis
Formulation of activity plan

A-12

Annual Plan of Operation (Distribution Management for SHAPWASCO)

Items	2011									2012		
	Phase-1											
	4	5	6	7	8	9	10	11	12	1	2	3
The water distribution management capacity is improved in Shwekyin Corporate as an advanced model												
Action-1	Discuss methods and conduct survey for water distribution management											
1-1	Organizing project team											
1-2	Analysis of present data regarding distribution management (Flow rate, pressure, water quality and etc.)											
1-3	Study and evaluation of systems for Red Hi-Pump, South Okn and Dehahla											
1-4	Discussion of suitable distribution management system in SHAPWASCO											
Action-2	Conduct training on water distribution management											
2-1	Training on water distribution management methods											
Action-3	Formulate a plan for water distribution management											
3-1	Planning of action plan											
3-2	Discussion on the selection criteria											
3-3	Selection of pilot project area											
3-4	Verification of equipment plan											

添付資料-3:　合同調整委員会（JCC）協議議事録

Minutes of Meeting
on
The 1st JCC
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

The 30th of September 2011

Mr. El Sayed Nasr	Dr. Salah Bayoumi	Mr. Katsumi Fujii
Project Director	Project Manager	Chief Advisor
Chairman	Head of Project Sector	The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Holding Company for Water and Wastewater (HCWW)	Holding Company for Water and Wastewater (HCWW)	Japan International Cooperation Agency (JICA)
Mr. Ahmed Abdeen	Mr. Ayman Abd El Kader	Mr. Mohamed Abu El Khair
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater (MCWW)

資料3-1

Annex : List of Participant

List of Participant

[Egyptian side]	
Mr. El Sayed Nasr	Chairman of HCWW
Mr. Mamdouh Raslan	Vice Chairman of HCWW
Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahmed Abdeen	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Mohamed Abu El Khair	Chairman of MCWW
[Japanese side]	
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Mitsuhito Omori	Deputy Chief Advisor / NRW Reduction
Mr. Hiroki Niimura	Leakage Detection
Mr. Kenji Yamada	Hydraulic Analysis for Network
Mr. Kiyoshi Kiyama	Distribution Network (2)
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Nobuhiro Ikuro	Chief Representative, JICA Egypt office
Mr. Koichi Mizukusa	Representative, JICA Egypt office
Mr. Nour El-Din Hussein	Senior Program Officer, JICA Egypt office

In the course of Phase-1 of the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (hereinafter referred to as "the Project"), the first meeting for Joint Coordinating Committee (hereinafter referred to as "JCC") was held on the 27th of September 2011.

The following were confirmed in the meeting:

1. Progress of the Project

Dr. Salah Bayoumi, the Project Manager, explained the progress of the Project. The participants confirmed it.

2. APO, PO and PDM

Mr. Katsumi Fujii, the Chief Advisor, proposed to improve the Annual Plan of Operation (hereinafter referred to as "APO"), the Plan of Operation (hereinafter referred to as "PO") and the Project Design Matrix (hereinafter referred to as "PDM") as the results of the steering committee meeting held on the 12th September 2011.

The words "**certified** as trainers by Steering Committee", which was mentioned in the PDM as objectively verified indicators of output-1) were proposed in the JCC to be modified to "**approved** as trainers by Steering Committee". The participants agreed on the proposal and confirmed the improved/modified APO, PO and PDM as shown in attachment-1, 2 and 3.

3. Additional Activities for Promotion of Public Awareness

As a result of the steering committee meeting held on the 12th September 2011, the Chief Advisor proposed to add activities to promote public awareness to the Project. The participants agreed on the proposal and confirm the following:

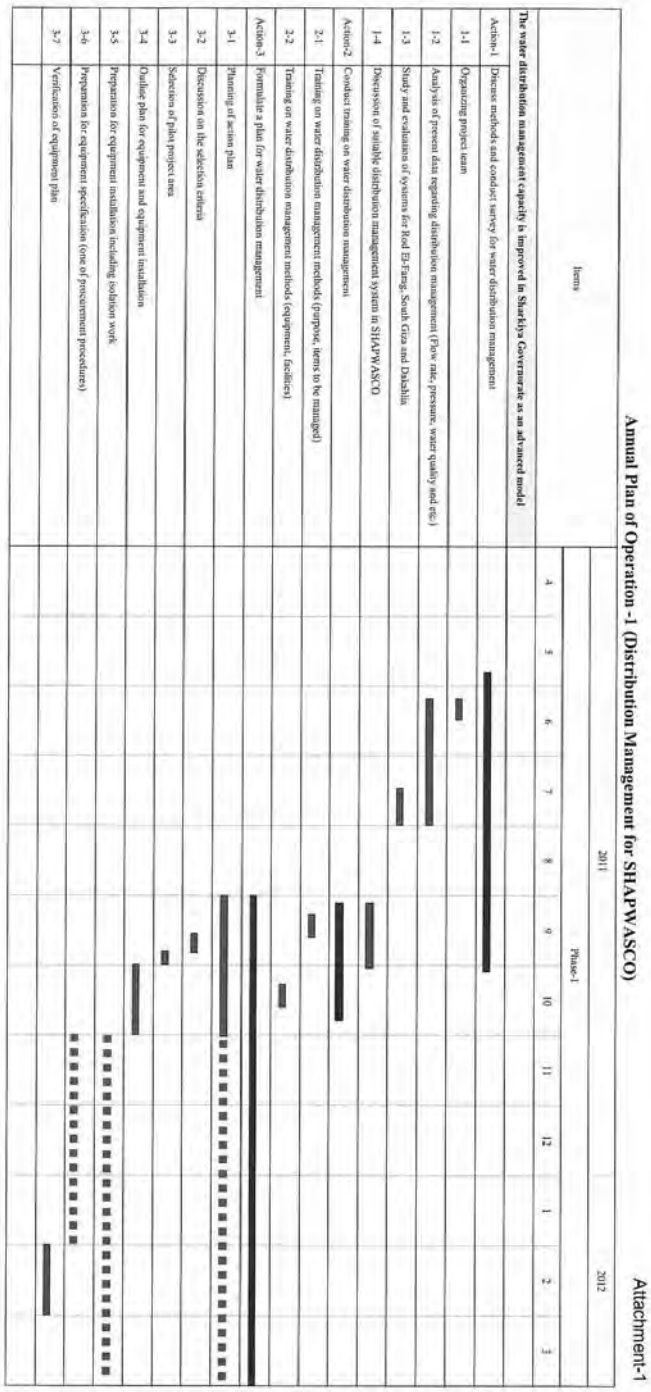
(1) To study necessary activities to be conducted in the Project.
(2) To study capable input by JICA and the Egyptian side.
(3) To identify necessary activities.
(4) To discuss/approve in the next JCC for modification of PDM.
(5) To have the next JCC in the end of February 2012 or in the beginning of March 2012.
(6) Not to reduce the budget for SOP and NRW.
(7) To take overall plan of HCWW into consideration.
(8) To include some new activities/ideas.

(end)

別添3-2

Attachment-1

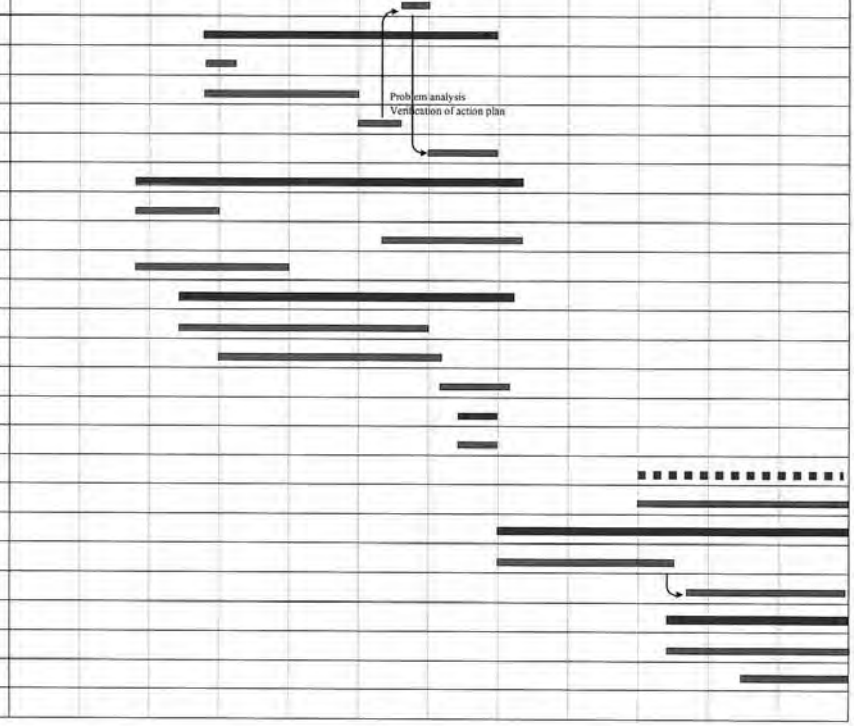
Annual Plan of Operation -1 (Distribution Management for SHAPWASCO)



Attachment-1

Annual Plan of Operation -1 (NRW Reduction)

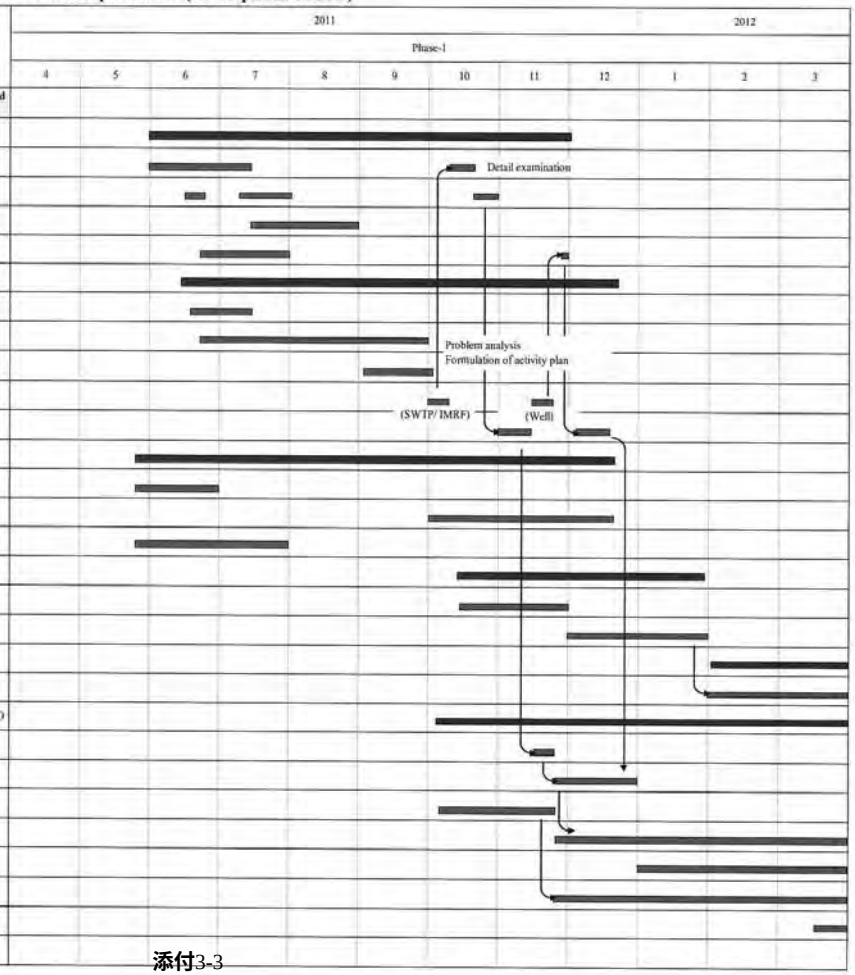
	Items	2011										2012	
		Phase-1											
		4	5	6	7	8	9	10	11	12	1	2	3
The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates													
Action-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates												
1-1	Survey for the actual condition regarding water distribution network (data collecting)												
1-2	Analysis of the balance between water distribution amount and water consumption												
1-3	Compiling the result of analysis												
Action-2	Select 3 model areas in Gharbia and Minufia Governarate each												
2-1	Discussion on the selection criteria												
2-2	Arrangement of long list												
2-3	Selection of model area (Discussion with C/P)												
2-4	Final selection of model area												
Action-3	Organize NRW reduction teams												
3-1	Selection of fulltime NRW member in GHAPWASCO and MCWW												
3-2	Selection of C/P member in model area												
3-3	Selection of trainer in SHAPWASCO												
Action-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO												
4-1	Re-examination of action plan in Sharkiya Governorate												
4-2	Planning of action plan												
4-3	Finalizing of action plan												
Action-5	Conduct training on general practice of NRW reduction												
5-1	Lecture and site practice in Sharkiya												
Action-6	Conduct training at the training yard in Sharkiya Governorate												
6-1	Training on water leakage survey and water leakage detection equipments at the training yard in Sharkiya Governorate												
Action-7	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates												
7-1	Preparation of GIS drawing on model area-1												
7-2	Preparation of GIS drawing on model area-2												
Action-8	Make water balance analysis at model areas												
8-1	Minimum night flow survey												
8-2	Data analysis												



Attachment-1

Annual Plan of Operation -1 (Development of SOP)

	Items	2011										2012	
		Phase-1											
		4	5	6	7	8	9	10	11	12	1	2	3
Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates													
Action-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates												
1-1	Survey for the surface water treatment facilities												
1-2	Survey for the iron/ manganese removal facilities												
1-3	Collection of detail data for the SWTP and IMRF regarding operation and laboratory												
1-4	Survey for well facilities												
Action-2	Select 3 model facilities in Gharbia and Minufia Governorates each												
2-1	Discussion on the selection criteria												
2-2	Compiling the long list and survey report												
2-3	Evaluation of survey report and compiling the short list												
2-4	Selection of model facilities (Discussion with C/P)												
2-5	Final selection of model facilities												
Action-3	Organize SOP teams												
3-1	Selection of fulltime SOP member in GHAPWASCO and MCWW												
3-2	Selection of C/P member in model facilities												
3-3	Selection of trainer in SHAPWASCO												
Action-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate												
4-1	Assessment of the effectiveness of SOPs in Sharkiya Governorate												
4-2	Extraction of the problematic point												
Action-5	Revise SOPs of Sharkiya Governorate, if necessary												
5-1	Revision of SOPs of Sharkiya Governorate												
Action-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO												
6-1	Examination for the site condition (C/P organization control, Cooparative framework of trainer etc.)												
6-2	Preparation of basic system drawings (P&ID, Single line diagram)												
6-3	Examination of water quality management												
6-4	Preparation of draft SOPs for O&M with site training												
6-5	Preparation of unified forms of O&M records and reports												
6-6	Preparation of draft SOPs for water quality management												
6-7	Trial operation with the use of draft SOPs												



Attachment-2

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Plan of Operation (PO-1)

27 September 2011

No.	Items	Year1 1	Year1 2	Year1 3	Year1 4	Year2 1	Year2 2	Year2 3	Year2 4	Year3 1	Year3 2	Year3 3	Year3 4	Person in Charge	Major Input: Japan	Major Input: Egypt	Remarks
1. Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened																	
1-1.	Conduct management training for the top management			☆										HC, SH, G,M	☆ Training in Japan		
1-2.	Conduct Training of Trainers (TOT) for developing SOP			☆										SH, G,M	JICA Experts Local Exerts ☆ Training in Japan		Year 1: Mainly for SH Year 3: Mainly for G. M
1-3.	Conduct TOT for NRW reduction			☆										SH, G,M	JICA Experts Local Experts ☆ Training in Japan		
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GAPWASCO and MUPWASCO to the water supply companies in Nile Delta Area through reports and workshops													HC, SH, G,M	JICA Experts		
2. Based on the experiences of SHAPWASCO, SOPs are development and utilized at the model facilities in Gharbia and Minufia Governorates																	
2-1.	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates													G,M	JICA Experts	SH	
2-2.	Select 3 model facilities in Gharbia and Minufia Governorates each													G,M	JICA Experts	SH	
2-3.	Organize SOP teams													G,M	JICA Experts	SH	
2-4.	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate													G,M	JICA Experts	SH	
2-5.	Revise SOPs of Sharkiya Governorate, if necessary													G,M	JICA Experts	SH	
2-6.	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO													G,M	JICA Experts	SH	
2-7.	Conduct On-the-Job Training for GAPWASCO and MUPWASCO to apply SOPs in operation and maintenance													G,M	JICA Experts	SH	
2-8.	Monitor the progress of SOP activities													G,M	JICA Experts	SH	
2-9.	Draft the policy/plan for disseminating SOP to the other Marakazes													G,M	JICA Experts	SH	
3. The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates																	
3-1.	Analyze the current situation on NRW in Gharbia and Minufia Governorates													G,M	JICA Experts	SH	
3-2.	Select 3 model areas in Gharbia and Minufia Governorates each													G,M	JICA Experts	SH	
3-3.	Organize NRW reduction teams													G,M	JICA Experts	SH	
3-4.	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO													G,M	JICA Experts	SH	
3-5.	Conduct training on general practice of NRW reduction													G,M	JICA Experts	Mostrod Training Center	
3-6.	Conduct training at the training yard in Sharkiya Governorate													G,M	JICA Experts ☆ Training in Japan	SH	
3-7.	Conduct training at model areas for water distribution management in Sharkiya Governorate													G,M	JICA Experts	SH	
3-8.	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates													G,M	JICA Experts	SH	
3-9.	Make water balance analysis at model areas													G,M	JICA Experts	SH	
3-10.	Conduct leakage detection survey at model areas													G,M	JICA Experts	SH	
3-11.	Make water balance analysis after repair works													G,M	JICA Experts	SH	
3-12.	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes													G,M	JICA Experts	SH	
4. The water distribution management capacity is improved in Sharkiya governorate as an advanced model																	
4-1.	Discuss methods and conduct survey for water distribution management													SH	JICA Experts		
4-2.	Conduct training for water distribution management													SH	JICA Experts ☆ Training in Japan		
4-3.	Formulate a plan for water distribution management													SH	JICA Experts		
4-4.	Install the equipment for water distribution management at the model area													SH	JICA Experts		
4-5.	Operate the system													SH	JICA Experts		
4-6.	Develop SOP for water distribution management													SH	JICA Experts		
4-7.	Evaluate the operation and SOP for water distribution management													SH	JICA Experts		
0. The project is managed and coordinated properly																	
0-1.	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GAPWASCO and MUPWASCO													HC, SH, G, M	JICA Experts		
0-2.	Coordinate among SHAPWASCO, GAPWASCO and MUPWASCO through the Steering Committee													HC, SH, G, M	JICA Experts		
0-3.	Organize the Joint Coordination Committee (JCC) meeting at least once a year													HC, SH, G, M	JICA Experts		
0-4.	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC													HC, SH, G, M	JICA Experts		
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC													HC, SH, G, M	JICA Experts		
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM						●				▲			HC, SH, G, M	JICA Experts		● Mid-Term Review ▲ Final Evaluation

Attachment-1

Annual Plan of Operation -1 (General Activity)

No.	Items	2011 Phase-1: 4	5	6	7	8	9	10	11	12	2012: 1	2	3
Output0:	**The project is managed and coordinated properly**												
0-1.	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW												
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee												
0-3.	Organize the Joint Coordinating Committee (JCC) meeting at least once a year												
0-4.	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC												
0-5	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC												
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM												
Output1:	**Human Resource Development through coordination among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened**												
1-1.	Conduct management training for the top management						Lecture in Egypt	Training in Japan					
1-2.	Conduct Training of Trainers (TOT) for developing SOP							for SHAPWASCO					
1-2-1.	OJT for training					OJT through SOP assessment							
1-2-2.	Special training							TOT for lecture		Training in Japan			
1-3.	Conduct TOT for NRW reduction							for SHAPWASCO					
1-3-1.	OJT for training					OJT through training practices							
1-3-2.	Special training							TOT for lecture		Training in Japan			
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops				Model areas &								
1-4-1.	Seminars / workshops to be conducted by SHAPWASCO			SOP NRW	facilities Well		Seminar for Nile Delta	Site tour NRW practice	Meter workshop		Training for leak detection		
	<Equipment Plan>												
	Equipment Procurement (JICA Expert)			Preparation	Procurement		Transportation	Procurement (generator)					
	Equipment Procurement (JICA)				Procurment (Egypt)			Procurment (Japan)		Procurment (Japan)			
	<Training in Japan>												
	Management Training												
	NRW												
	SOP												

Attachment-3

Activities	Inputs	Important Assumption
1-1 Conduct management training for the top management 1-2 Conduct Training of Trainers (TOT) for developing SOP 1-3 Conduct TOT for NRW reduction 1-4 Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops 2-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates 2-2 Select 3 model facilities in Gharbia and Minufia Governorates each 2-3 Organize SOP teams 2-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate 2-5 Revise SOPs of Sharkiya Governorate, if necessary 2-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO 2-7 Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance 2-8 Monitor the progress of SOP activities 2-9 Draft the policy/plan for disseminating SOP to the other Marakazes 3-1 Analyze the current situation on NRW in Gharbia and Minufia Governorates 3-2 Select 3 model areas for NRW reduction in Gharbia and Minufia Governorates each 3-3 Organize NRW reduction teams 3-4 Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO 3-5 Conduct training on general practice of NRW reduction 3-6 Conduct training at the training yard in Sharkiya Governorate 3-7 Conduct training at model areas for water distribution management in Sharkiya Governorate 3-8 Prepare GIS drawing for model areas in Gharbia and Minufia Governorates 3-9 Make water balance analysis at model areas 3-10 Conduct leakage detection survey at model areas 3-11 Make water balance analysis after repair works 3-12 Draft policy/plan for disseminating NRW reduction activities to the other Marakazes 4-1 Discuss methods and conduct survey for water distribution management 4-2 Conduct training for water distribution management 4-3 Formulate a plan for water distribution management 4-4 Install the equipment for water distribution management at the model area 4-5 Operate the system 4-6 Develop SOP for water distribution management 4-7 Evaluate the operation and SOP for water distribution management 0-1 Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW 0-2 Discuss the contents, the manners for the cooperation among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee 0-3 Organize JCC at least once a year 0-4 Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first Joint Coordination Committee (JCC) 0-5 Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC 0-6 Monitor the progress of PO/APO and achievement of the Indicators of the PDM	**Japanese side** 1) Japanese Experts · Chief advisor/water supply planning · NRW reduction management · Leakage detection · Water Treatment · Water quality · Electrical equipment · Mechanical equipment · Distribution network · Others (if necessary) 2) Local Expert 3) Equipment 4) Training in Japan 5) Local Cost **Egyptian side** 1) Counterpart Personnel · Project Director: Chairman, HCWW · Project Manager: Chairman, SHAPWASCO · Co-Project Manager: Chairman, GHAPWASCO Chairman, MCWW · SOP Team · NRW Team 2) Office space and facilities for the experts 3) Equipment 4) Necessary Information 5) Local Cost	Budget for the Project is allocated as planed by HCWW, SHAPWASCO, GHAPWASCO, and MCWW **【Pre-condition】** Budget for HRD is allocated properly to SHAPWASCO, GHAPWASCO and MCWW by HCWW

Attachment-3

Dated September 27,2011

Project Design Matrix (PDM1)

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Duration : FY2011-FY2013

Project Site : Sharkiya Governorate, Gharbia Governorate, Minufia Governorate (Nile Delta Area)

Target Group : Staff of SHAPWASCO, GHAPWASCO, MCWW

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
【Super Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area	Performance Indicators (PIs) in the fields of management capacity of operation and maintenance are improved in Nile Delta Area	Quarterly Reports of all water supply companies in Nile Delta Area submitted to HCWW	
【Overall Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Central and local government budget for development of water supply facilities is allocated appropriately
【Project Purpose】 Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved at the model areas/facilities	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Governmental policy on water supply sector does not change significantly
【Output】 1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened	a. More than 3 members each of SOP/NRW teams in SHAPWASCO · GHAPWASCO · MCWW are approved as trainers by Steering Committee b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team	a. Certification of Training b. Reports of workshops	Employees who received trainings by the Project will continuously work for SHAPWASCO, GHAPWASCO, MCWW Personnel transfer of executive management will not affect the implementation of the Project
2) Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates	a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation b. The model facilities are operated and maintained based on SOP c. Improvement of PIs for the model facilities are evaluated based on SOP	a, b, c. Project Progress Reports	
3) The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates	a. More than 80% of NRW teams members rates understanding of trainings more than 3 on the 5-scale evaluation b. Water balance analysis is conducted properly for the 3 model areas c. 100% of detected leakage is repaired at the model area	a, b, c. Project Progress Reports	
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model	a. Water distribution is managed based on SOP at the model areas b. Issues on water distribution capacity are reported to top management of SHAPWASCO	a, b. Project Progress Reports	
0) The project is managed and coordinated properly	a. Agreement on the coordination among SHAPWASCO · GHAPWASCO · MCWW is prepared b. Project activities are regularly monitored based on PO/APO	a. Agreement Document b. Project Progress Reports	

Minutes of Meeting
on
The 2nd JCC
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

The 11th of March 2012

Mr. Mamdouh Raslan	Dr. Salah Bayoumi	Mr. Katsumi Fujii
Vice Chairman	Project Manager	Chief Advisor
Holding Company for Water and Wastewater (HCWW)	Head of Project Sector Holding Company for Water and Wastewater (HCWW)	The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area, Japan International Cooperation Agency (JICA)

Mr. Ahmed Abdeen	Mr. Ayman Abd El Kader	Mr. Mohamed Abu El Khair
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater

HCWW

HOLDING COMPANY FOR WATER AND WASTEWATER

To start Phase-2 of the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (hereinafter referred to as "the Project"), the second meeting for Joint Coordinating Committee (hereinafter referred to as "JCC") was held on the 11th of March 2012.

The following were confirmed in the meeting:

1. Progress of the Project

Dr. Salah Bayoumi, the Project Manager, explained the progress of the Project. The participants confirmed it.

2. APO

Mr. Katsumi Fujii, the Chief Advisor, explained activities' plan for the Phase 2 and proposed the Annual Plan of Operation (hereinafter referred to as "APO") as the results of the steering committee meeting held on the 26th February 2012 (Attachment-1). The APO was approved by the participants.

3. Other Discussions

In the course of the meeting, the following are commented / discussed by the participants.

(1) Schedule for SOP and NRW activities

The participant confirmed that the Project team tries to finish the planned activities as early as possible for SOP and NRW, so that the team adds other model facilities/areas for the Project. Since the preparation works such as chambers construction is one of the critical items for management of scheduling and financing, the three companies (SHAPWASCO, GHAPWASCO and MCWW) requested HCWW to support financially.

(2) More Closed Communication between the Project Co-Managers and members of the Project Team

MCWW requested the Project team to provide more detailed schedules (monthly) for the Project Co-Manager to enable follow-up of the programs / activities. JICA expert team (hereinafter referred to as "JET") will consider providing such schedules and more meeting than the current Project Team Meetings (PTMs), especially for less available cases of JICA experts.

JET requested MCWW to provide the head of the Project team, who direct both SOP and NRW teams as a responsible for the whole activities. MCWW answered that the nomination was finished but under examination for appropriateness.

(3) Person in HCWW to promote Communication among ACs and to Publicize the Project Activities

JET requested HCWW to provide a staff member in charge of communication/publicity for/of the Project. The purposes are as follows:

- Collect the Project's information timely and periodically (including site visits) and disclose it in meetings of Affiliated Companies (hereinafter referred to as "ACs") and newsletters of HCWW, under HCWW initiatives.

- Promote inter-company cooperation in Nile Delta and Egypt for water supply service.
- Promote sustainability of the Project outputs through monitoring the 3 ACs' activities after the Project, for the inter-company cooperation and the continuous activities on SOP, NRW and WDM.
- Publicize the Project and activities to other donors and share the information by HCWW newsletters.
- Publicize the Project and activities to the general public by the homepage of HCWW (in both English and Arabic).

HCWW agreed to assign someone soon for the mentioned purpose.

(4) Training in Japan for WDM

Training in Japan for WDM is planned to be in September 2012. Although JICA had a plan initially to receive two trainees for WDM, four trainees would be acceptable. The increase of trainees' number will be approved by JICA after confirmation of the candidates' skills, experiences, activities in the Project, current positions, future activities in WDM, etc. JET requested the Egyptian side to nominate the candidates and prepare the application forms within 10 days at least by the end of March 2012 for approval.

(end)

Annex : List of Participant

List of Participant

[Egyptian side]	
Mr. Mamdouh Raslan	Vice Chairman of HCWW
Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahmed Abdeen	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Mohamed Abu El Khair	Chairman of MCWW
[Japanese side]	
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Hiroki Niimura	Leakage Detection
Mr. Ryoji Nagao	Mechanical Equipment
Mr. Nagi Gaber	Facilitator
Mr. Shigeru Otake	Senior Representative, JICA Egypt office
Mr. Koichi Mizukusa	Representative, JICA Egypt office
Ms. Heba Hamdy	Program Officer

Attacment-1 Phase-2: Annual Plan of Operation (General Activity)

Items		2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
Output0 :	**The project is managed and coordinated properly**														
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee														
0-3.	Organize the Joint Coordinating Committee (JCC) meeting at least once a year														
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC														
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM														
Output1:	**Human Resource Development through coordination among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened**														
1-2.	Conduct Training of Trainers (TOT) for developing SOP	for SHAPWASCO													
1-2-1.	OJT for training	OJT through SOP assessment													
1-3.	Conduct TOT for NRW reduction	for SHAPWASCO													
1-3-1.	OJT for training	OJT through training practice													
1-4	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops														
1-4-1.	Seminars / workshops to be conducted by SHAPWASCO				SOP				SOP	NRW	SOP			SOP	WDM
1-4-2.	Training on water leakage survey and water leakage detection equipment at the training yard in Sharkiya Governorate														
1-4-3.	Open seminars														
	<Equipment Plan>														
	Equipment Procurement (JICA Expert)	Procurement			Transport	Delivery									
	Equipment Procurement (JICA)	Procurement (Water CAD)									Procurement (WDM)				
	<Training in Japan>														
	WDM										S.B.				

Attacment-1 Phase-2: Annual Plan of Operation (Development of SOP)

Items		2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates															
Action-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates														
Action-2	Select 3 model facilities in Gharbia and Minufia Governorates each														
Action-3	Organize SOP teams														
Action-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate														
4-1	Assessment of the effectiveness of SOPs in Sharkiya Governorate														
4-2	Extraction of the problematic point														
Action-5	Revise SOPs of Sharkiya Governorate, if necessary														
5-1	Revision of SOPs of Sharkiya Governorate														
Action-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO														
6-1	Examination for the site condition (C/P organization control, Cooperative framework of trainer etc.)														
6-2	Preparation of basic system drawings (P&ID, Single line diagram)														
6-3	Preparation of draft SOPs for O&M with site training														
6-4	Preparation of unified forms of O&M records and reports														
6-5	Examination of water quality management														
6-6	Preparation of draft SOPs for water quality management														
Action-7	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance														
7-1	Applying of SOP on On-the-Job Training														
Action-8	Monitor the progress of SOP activities														
8-1	Monitoring of activity condition on On-the-Job Training										S.B.				

Attacment-1 Phase-2: Annual Plan of Operation (NRW Reduction)

	Items	2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates															
Action-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates														
Action-2	Select 3 model areas in Gharbia and Minufia Governorate each														
Action-3	Organize NRW reduction teams														
Action-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO														
Action-5	Conduct training on general practice of NRW reduction														
5-1	Lecture and site practice in Sharkiya														
Action-6	Conduct training at the training yard in Sharkiya Governorate														
6-1	Training on water leakage survey and water leakage detection equipment at the training yard in Sharkiya Governorate														
Action 7	Conduct training at model areas for water distribution management in Sharkiya Governorate														
Action-8	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates														
8-1	Preparation of GIS drawing on model area-1														
8-2	Preparation of GIS drawing on model area-2														
8-3	Preparation of GIS drawing on model area-3														
Action-9	Make water balance analysis at model areas														
9-1	Conducting Minimum Night Flow (MNF) survey for candidate pilot area														
9-2	Determining pilot project area for each model area (Markaz)														
9-3	Making field survey of distribution network			Model area-1					Model area-2					Model area-3	
9-4	Conducting Water flow measurement				Model area-1					Model area-2					Model area-3
9-5	Measuring metering error for working and waste in the house				Model area-1					Model area-2					Model area-3
9-6	Making Water balance analysis before repair works					Model area-1					Model area-2				Model area-3
Action 10	Conduct leakage detection survey at model areas														
10-1	Conduct leakage detection survey at model areas						Model area-1					Model area-2			
10-2	Repairing leaking parts						Model area-1					Model area-2			
10-3	Improvement of water meter condition						Model area-1								
Action 11	Make water balance analysis after repair works														
11-1	Conducting Water flow measurement							Model area-1					Model area-2		
11-2	Making water balance analysis after repair works and evaluation										Model area-1			Model area-2	

Attacment-1 Phase-2: Annual Plan of Operation (Distribution Management for SHAPWASCO)

	Items	2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
The water distribution management capacity is improved in Sharkiya Governorate as an advanced model															
Action-3	Formulate a plan for water distribution management														
3-1	Planning of action plan														
3-4	Outline plan for equipment and equipment installation														
3-5	Preparation for equipment installation including isolation work														
3-6	Preparation for equipment specification (one of procurement procedures)														
3-7	Verification of equipment plan														
3-8	Plan of target flow, pressure and quality of water by block														
3-9	Survey on current condition (summer) by block														
3-10	Verification of Plan of target flow, pressure and quality of water by block														
3-11	Training in Japan														
Action-4	Install the equipment for water distribution management at the model area														
	Preparation for space for monitoring room														
	Preparation for communicating system														
	Chamber construction by SHAPWASCO														
	JICA procedures for equipment procurement														
	Installation of the equipment														
Action-5	Operate the system														
	Trial operation of the system														
	Trial modification of distribution mode														
	1st evaluation of the system														

Minutes of Meeting
on
The 3rd JCC
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

The 26th of November 2012

添付3-10

Mr. El Sayed Nasr	Dr. Salah Bayoumi	Mr. Katsumi Fujii
Project Director	Project Manager	Chief Advisor
Chairman	Head of Project Sector	The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area, Japan International Cooperation Agency (JICA)
Holding Company for Water and Wastewater (HCWW)	Holding Company for Water and Wastewater (HCWW)	
Mr. Ahmed Abdeen	Mr. Ayman Abd El Kader	Mr. Ezzat El Sayad
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater (MCWW)

The third meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") was held on the 26th of November 2012 for the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply (hereinafter referred to as "the Project"). The following were confirmed in the meeting:

1. Modification of Model Facilities

(1) SWTP in GHAPWASCO

In the 4th steering committee, GHAPWASCO requested to replace the SOP model facility (the old Tanta treatment plant: Gedeeda) with the new one (Melahia) for SWTP. It was approved by the JCC and the participants confirmed the following:

1) Gedeeda should be replaced with Melahia for the model facility of SWTP.
2) SOP of Gedeeda should be developed by GHAPWASCO. JICA Expert Team (JET) will assist it unofficially for the SOP development.

(2) Well in MCWW

MCWW requested to replace Dekma with Ashama for the model well, due to the following reasons:

1) Groundwater level is decreasing. Accordingly, the well should be closed soon.
2) An alternative well is not allowed by Ministry of Health to be drilled in the well field, in a view of environmental conditions.

The JCC approved the replacement and the participants confirmed the following:

- MCWW will install a new flow meter.
- MCWW will repair a flow meter, which is not functioning.

2. PIs to evaluate the Project Achievements

The participants agreed on the PIs to be applied for the Project evaluation as follows:

2-1 PIs to be monitored officially by the Project

(1) SOP

1) Energy consumption per cubic meter of water produced (kWh/m^3)

"Energy consumption in SWTP / Fe-Mn facility (kWh)" / "Water production (m^3)"

It should be monitored monthly.

2) Unit consumption of alum sulfate / chlorine / potassium permanganate used per one cubic meter of water produced (g/m^3)

"Consumption of alum sulfate / chlorine / potassium permanganate in SWTP / Fe-Mn facility (g)" / "Water production (m^3)"

It should be monitored monthly.

3) Ratio of effective utilization of raw water (%)

"Production volume of plant (m^3)" / "Intake volume of plant (m^3)"

It should be monitored monthly.

(2) NRW

1) NRW ratio (%)

"NRW (m^3)" / "System input volume (m^3)"

"NRW (m^3)" = "System input volume (m^3)" – "Billed water (m^3)"

2) Reduction rate of NRW

Reduction rate of NRW (%)

("NRW ratio before improvement (%)" - "NRW ratio after improvement (%)) / "NRW ratio before improvement (%)"

(3) WDM

1) Number of complaints per 1000 connections on water suspension and low pressure (Nos)

"Number of complaints on water suspension and low pressure" / 1000 connections

It should be monitored monthly. The Project team will propose improvement of record and/or confirmation system of complaints during the Project period, such as screening in accordance with causes of troubles.

2) Ratio of low service pressure (%)

("Total hours of low pressure recorded at all continuous monitoring points" / ("Number of points for continuous pressure monitoring" x 30 days x 24hours)

It should be monitored monthly. The pressure level to be recorded as low pressure was defined as less than 1 bar. However, WDM team will provide analysis for other cases such as 1.5 bars, 2 bars, etc.

2-2 PIs to be monitored as reference indicators by ACs for self-evaluation

(1) SOP

Suspension hours of SWTP or Fe/Mn facilitiy (Hours)

"Suspension hours of SWTP or Fe/Mn facilitiy (Hours)"

It is only for complete suspension of water treatment facility due to damages / troubles of plant.

It should be monitored by MCWW at three months interval.

(2) WDM

Ratio of Public Opinion mentioning enough pressure (%)

"Number of interviewees mentioning enough and/or improved pressure" / "Total number of interviewees"

Ayman SB Abdeen

It is a subject to be conducted by SHAPWASCO in Area-4 only. It should be conducted before and after the pilot Project. Prior to the survey as well as the pilot project, SHAPWASCO will check the actual pressures in Area-4.

3. Dissemination in the Governorate

In order to disseminate the skills for SOP and NRW, the commencement of dissemination is expected to be conducted in the next half period of the Project. The participants confirmed that the following are to be started by the Egyptian C/P members without or less input of JICA experts.

SOP

- To select next model facilities.
- To survey the system of treatment.
- To make drawings such as P&ID, single line diagram.
- To undertake necessary calibration / installation of meters.
- To prepare draft SOP as well as commencement of data acquisition and record.

NRW

- To select next model areas.
- To construct chambers for flow meters as well as arrangement of isolation.
- To conduct MNF survey.
- To conduct water balance survey.
- To conduct initial survey for leakage.

In parallel, GHAPWASCO and MCWW will reform the organization to have permanent department for SOP and NRW having full-time staff members in the course of the Project.

4. Recommendation for NRW activities

JET recommends the following to be conducted by the Project after completion of activities in the current three model areas, in order to promote leak detection capacity. It should be conducted together with members of branch offices. The participant agreed with the recommendation. However, detail plan should be discussed more with each of GHAPWASCO and MCWW.

Activities

1) To choose model areas (3 – 5ha) regardless of possibility of isolation.
2) To make survey for leakage in the area.
3) To estimate the leak volume during the repair works.
4) To calculate the estimated leak volume per ha. (To estimate the reduction volume of NRW / ha.)
5) To evaluate the efficiency of leak detection / repair.
6) To commence the other model area.

Ayman SB Abdeen

5. Modification of PDM and PO

Taking into account the current progress (including delays) and discussion on PIs, JET recommended modifying the PDM and PO as shown in Annex-2 and 3. The participants agreed on the modification.

(end)

ANNEX

Project Design Matrix (PDM2)

Dated November 26, 2012

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Duration : FY2011-FY2013

Project Site : Sharkiya Governorate, Gharbia Governorate, Minufia Governorate (Nile Delta Area)

Target Group : Staff of SHAPWASCO, GHAPWASCO, MCWW

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
【Super Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area	Performance Indicators (PIs) in the fields of management capacity of operation and maintenance are improved in Nile Delta Area	Quarterly Reports of all water supply companies in Nile Delta Area submitted to HCWW	
【Overall Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Central and local government budget for development of water supply facilities is allocated appropriately
【Project Purpose】 Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates	PIs (*1) in the fields of management capacity of operation and maintenance are improved at the model areas/facilities	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	~~Governmental policy on water supply sector does not change significantly~~
【Output】 1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened	a. More than 3 members each of SOP/NRW teams in SHAPWASCO・GHAPWASCO・MCWW are approved as trainers by Steering Committee b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team	a. Certification of Training b. Reports of workshops	Employees who received trainings by the Project will continuously work for SHAPWASCO, GHAPWASCO, MCWW Personnel transfer of executive management will not affect the implementation of the Project
2) Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates	a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation b. The model facilities are operated and maintained based on SOP c. Improvement of PIs (*1) for the model facilities are evaluated based on SOP	a, b, c. Project Progress Reports	
3) The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates	a. More than 80% of NRW teams members rates understanding of trainings more than 3 on the 5-scale evaluation b. Water balance analysis is conducted properly for the 3 model areas c. 100% of detected leakage is repaired at the model area	a, b, c. Project Progress Reports	
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model	a. Water distribution is managed based on SOP at the model areas b. Issues on water distribution capacity are reported to top management of SHAPWASCO	a, b. Project Progress Reports	
0) The project is managed and coordinated properly	a. Agreement on the coordination among SHAPWASCO・GHAPWASCO・MCWW is prepared b. Project activities are regularly monitored based on PO/APO	a. Agreement Document b. Project Progress Reports	

*1 PIs

SOP: a. Energy consumption per m^3 of water production (kWh/m^3) b. Unit consumption of alum sulfate/ chlorine / potassium permanganate used per m^3 of water production (g/m^3)
c. Ratio of effective utilization of raw water (%)

NRW: a. NRW ratio (%) b. Reduction ratio of NRW (%)

WDM: a. Number of complaints per 1000 connections on water suspension and low pressure (%) b. Ratio of low service pressure (%)

Ayman Abdeen E.E.

A-2A7-8

Annex-1 : List of Participant

List of Participant

[Egyptian Side]

Mr. El Sayed Nasr	Chairman of HCWW
Mr. Mamdouh Raslan	Vice Chairman of HCWW
Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahmed Abdeen	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Ezzat El Sayad	Chairman of MCWW
Mr. Alae El Din Mohamed	Head of C/P Team/Headquarters of SHAPWASCO
Mr. Mohamed Atef Abdel Hamid	Assistant for head of WDM team/Headquarters of SHAPWASCO
Mr. Ahmed Abdel Maaboud El Maleh	SOP team leader of GHAPWASCO
Mr. Ahmed El Said Rabea	NRW team leader of GHAPWASCO

[Japanese Side]

Mr. Katsumi FUJII	Chief Advisor/Water Supply Planning
Mr. Hiroki NIIMURA	Leakage Detection
Mr. Ryoji NAGAO	Mechanical Equipment
Mr. Kenji YAMADA	Hydraulic Analysis for Network
Mr. Masahiro TAKEUCHI	Distribution Network(1)
Mr. Nobuyuki IIJIMA	Well Monitoring
Mr. Atsushi KATO	Coordinator
Mr. Nagi GABER	Facilitator of Project Team
Mr. Mohamed ABOU ZEKRY	Facilitator of Project Team
Mr. Mohammed ABD El-KADER	Facilitator of Project Team
Mr. Yoshiki OMURA	JICA Senior Advisor
Mr. Satoshi HAMANO	JICA Global Environment Department
Mr. Nobuhisa IWASE	JICA Mid-term Review Team
Mr. Shigeru OTAKE	Senior Representative, JICA Egypt Office
Mr. Koichi MIZUKUSA	Representative, JICA Egypt Office
Ms. Sally Abdel Aziz	Project Assistant, JICA Egypt Office

Abdeen E.E. S.O Ayman

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Annex-3 : PO2

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Plan of Operation (PO-2)

26 November 2012

Items	Year1 1	Year1 2	Year1 3	Year1 4	Year2 1	Year2 2	Year2 3	Year2 4	Year3 1	Year3 2	Year3 3	Year3 4	Person in Charge	Major Input: Japan	Major Input: Egypt	Remarks
1. Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened																
1-1. Conduct management training for the top management			X										HC, SH, G.M	☆ Training in Japan		
1-2. Conduct Training of Trainers (TOT) for developing SOP			☆										SH, G.M	JICA Experts (Local Expert) ☆ Training in Japan		Year 1: Mainly for SH Year 3: Mainly for G.M
1-3. Conduct TOT for NRW reduction			☆										SH, G.M	JICA Experts ☆ Training in Japan		
1-4. Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops													HC, SH, G.M	JICA Experts		
2. Based on the experiences of SHAPWASCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates																
2-1. Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates													G.M	JICA Experts	SH	
2-2. Select 3 model facilities in Gharbia and Minufia Governorates each													G.M	JICA Experts	SH	
2-3. Organize SOP teams													G.M	JICA Experts	SH	
2-4. Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate													G.M	JICA Experts	SH	
2-5. Revise SOPs of Sharkiya Governorate, if necessary													G.M	JICA Experts	SH	
2-6. Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO													G.M	JICA Experts	SH	
2-7. Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance													G.M	JICA Experts	SH	
2-8. Monitor the progress of SOP activities													G.M	JICA Experts	SH	
2-9. Draft the policy/plan for disseminating SOP to the other Marakazes													G.M	JICA Experts	SH	
3. The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates																
3-1. Analyze the current situation on NRW in Gharbia and Minufia Governorates													G.M	JICA Experts	SH	
3-2. Select 3 model areas in Gharbia and Minufia Governorates each													G.M	JICA Experts	SH	
3-3. Organize NRW reduction teams													G.M	JICA Experts	SH	
3-4. Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO													G.M	JICA Experts	SH	
3-5. Conduct training on general practice of NRW reduction													G.M	JICA Experts	SH	
3-6. Conduct training at the training yard in Sharkiya Governorate													G.M	JICA Experts ☆ Training in Japan	SH	
3-7. Conduct training at model areas for water distribution management in Sharkiya Governorate													G.M	JICA Experts	SH	
3-8. Prepare GIS drawing for model areas in Gharbia and Minufia Governorates													G.M	JICA Experts	SH	
3-9. Make water balance analysis at model areas													G.M	JICA Experts	SH	
3-10. Conduct leakage detection survey at model areas													G.M	JICA Experts	SH	
3-11. Make water balance analysis after repair works													G.M	JICA Experts	SH	
3-12. Draft policy/plan for disseminating NRW reduction activities to the other Marakazes													G.M	JICA Experts	SH	
4. The water distribution management capacity is improved in Sharkiya governorate as an enhanced model																
4-1. Discuss methods and conduct survey for water distribution management													SH	JICA Experts		
4-2. Conduct training for water distribution management													SH	JICA Experts ☆ Training in Japan		
4-3. Formulate a plan for water distribution management													SH	JICA Experts		
4-4. Install the equipment for water distribution management													SH	JICA Experts		
4-5. Operate the system													SH	JICA Experts		
4-6. Develop SOP for water distribution management													SH	JICA Experts		
4-7. Evaluate the operation and SOP for water distribution management													SH	JICA Experts		
0. The project is managed and coordinated properly																
0-1. Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW													HC, SH, G.M	JICA Experts		
0-2. Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee													HC, SH, G.M	JICA Experts		
0-3. Organize the Joint Coordination Committee (JCC) meeting at least once a year													HC, SH, G.M	JICA Experts		
0-4. Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC													HC, SH, G.M	JICA Experts		
0-5. Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC													HC, SH, G.M	JICA Experts		
0-6. Monitor the progress of PO&APO and achievement of the Indicators of the PDM													HC, SH, G.M	JICA Experts		● Mid-Term Review ▲ Final Evaluation

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A-4

	Activities	Inputs	Important Assumption
1-1	Conduct management training for the top management	Japanese side 1) Japanese Experts ・ Chief advisor/water supply planning ・ NRW reduction management ・ Leakage detection ・ Water Treatment ・ Water quality ・ Electrical equipment ・ Mechanical equipment ・ Distribution network ・ Others (if necessary) 2) Local Expert 3) Equipment 4) Training in Japan 5) Local Cost Egyptian side 1) Counterpart Personnel ・ Project Director: Chairman, HCWW ・ Project Manager: Chairman, SHAPWASCO ・ Co-Project Manager: Chairman, GHAPWASCO Chairman, MCWW ・ SOP Team ・ NRW Team 2) Office space and facilities for the experts 3) Equipment 4) Necessary Information 5) Local Cost	Budget for the Project is allocated as planed by HCWW, SHAPWASCO, GHAPWASCO, and MCWW 【Pre-condition】 Budget for HRD is allocated properly to SHAPWASCO, GHAPWASCO and MCWW by HCWW
1-2	Conduct Training of Trainers (TOT) for developing SOP		
1-3	Conduct TOT for NRW reduction		
1-4	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops		
2-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates		
2-2	Select 3 model facilities in Gharbia and Minufia Governorates each		
2-3	Organize SOP teams		
2-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate		
2-5	Revise SOPs of Sharkiya Governorate, if necessary		
2-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO		
2-7	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance		
2-8	Monitor the progress of SOP activities		
2-9	Draft the policy/plan for disseminating SOP to the other Marakazes		
3-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates		
3-2	Select 3 model areas for NRW reduction in Gharbia and Minufia Governorates each		
3-3	Organize NRW reduction teams		
3-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO		
3-5	Conduct training on general practice of NRW reduction		
3-6	Conduct training at the training yard in Sharkiya Governorate		
3-7	Conduct training at model areas for water distribution management in Sharkiya Governorate		
3-8	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates		
3-9	Make water balance analysis at model areas		
3-10	Conduct leakage detection survey at model areas		
3-11	Make water balance analysis after repair works		
3-12	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes		
4-1	Discuss methods and conduct survey for water distribution management		
4-2	Conduct training for water distribution management		
4-3	Formulate a plan for water distribution management		
4-4	Install the equipment for water distribution management at the model area		
4-5	Operate the system		
4-6	Develop SOP for water distribution management		
4-7	Evaluate the operation and SOP for water distribution management		
0-1	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW		
0-2	Discuss the contents, the manners for the cooperation among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee		
0-3	Organize JCC at least once a year		
0-4	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first Joint Coordination Committee (JCC)		
0-5	Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC		
0-6	Monitor the progress of PO/APO and achievement of the Indicators of the PDM		

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A-3

Minutes of Meeting
on
The 4th JCC
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

The 30th of October 2013

Mr. Mamdouh Raslan	Dr. Salah Bayoumi	Mr. Katsumi Fujii
Project Director	Project Manager	Chief Advisor
Chairman	Vice Chaiman	The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area, Japan International Cooperation Agency (JICA)
Holding Company for Water and Wastewater (HCWW)	Holding Company for Water and Wastewater (HCWW)	

Mr. Ahmed Abdeen	Mr. Ayman Abd El Kader	Mr. Ezzat El Sayad
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater (MCWW)

The forth meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") was held on the 30th of October 2013 for the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply (hereinafter referred to as "the Project"). It was planned to be the 7th steering committee. However, the participants confirmed to be managed as the 4th JCC since the Project Director attended it and confirmed the modification of PDM and PO. The following were confirmed in the meeting:

1. Modification of PDM and PO

The Project Manager explained a schedule of the Project to cover the suspension period of the expert assignment from July to October 2013, utilizing the modification drafts for PDM and PO, which were presented by JICA Expert Team (JET). The participants agreed on the draft to be new schedule. Through the discussion, the following are confirmed;

(1) Final evaluation is planned to be conducted in February 2014.
(2) The Project is planned to be ended in August 2014.

2. Confirmation of Project Director and Project Manager

Based on the modified assignment of top management for HCWW, the participants confirmed the management staff of the Project as follows;

Project Director:	Mr. Mamdouh Raslan,	Chairman of HCWW
Project Manager:	Dr. Salah Bayoumi,	Vice Chairman of HCWW

(end)

ANNEX

List of Participant

[Egyptian Side]

Mr. Mamdouh Raslan	Chairman of HCWW
Dr. Salah Bayoumi	Vice Chairman of HCWW
Mr. Ahmed Abdeen	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Ezzat El Sayad	Chairman of MCWW
Mr. Alae El Din Mohamed	Head of C/P Team/Headquarters of SHAPWASCO
Mr. Ahmed Maher	WDM team/Headquarters of SHAPWASCO
Mr. Abd El Rahim Mohamed	WDM team/Headquarters of SHAPWASCO
Mr. Mostafa Ibrahim	WDM team/Headquarters of SHAPWASCO
Mr. Ahmed El Maleh	Head of SOP Team of GHAPWASCO
Mr. Ahmed Rabee'	Head of NRW Team of GHAPWASCO
Mr. Ayman Bassyouni	Head of SOP Team of MCWW
Mr. Mohamed El Shafee	NRW Team of MCWW

[Japanese Side]

Mr. Katsumi Fujii	Chief Advisor/Water Supply Planning
Mr. Nagi Gaber	Facilitator of Project Team
Mr. Mohamed Abouzekry	Facilitator of Project Team
Mr. Mohammed Abd El-Kader	Facilitator of Project Team
Mr. Shiro Nakasone	Senior Representative, JICA Egypt Office
Ms. Sally Abdel Aziz	Program Officer, JICA Egypt Office

Annex-2: Project Design Matrix (PDM3)

Dated October 30, 2013

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area Duration : FY2011-FY2014

Project Site : Sharkiya Governorate, Gharbia Governorate, Minufia Governorate (Nile Delta Area) Target Group : Staff of SHAPWASCO, GHAPWASCO, MCWW

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
【Super Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area	Performance Indicators (PIs) in the fields of management capacity of operation and maintenance are improved in Nile Delta Area	Quarterly Reports of all water supply companies in Nile Delta Area submitted to HCWW	
【Overall Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Central and local government budget for development of water supply facilities is allocated appropriately
【Project Purpose】 Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates	PIs (*1) in the fields of management capacity of operation and maintenance are improved at the model areas/facilities	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	
【Output】 1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened	a. More than 3 members each of SOP/NRW teams in SHAPWASCO・GHAPWASCO・MCWW are approved as trainers by Steering Committee b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team	a. Certification of Training b. Reports of workshops	Employees who received trainings by the Project will continuously work for SHAPWASCO, GHAPWASCO, MCWW Personnel transfer of executive management will not affect the implementation of the Project
2) Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates	a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation b. The model facilities are operated and maintained based on SOP c. Improvement of PIs for the model facilities are evaluated based on SOP	a, b, c. Project Progress Reports	
3) The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates	a. More than 80% of NRW teams members rates understanding of trainings more than 3 on the 5-scale evaluation b. Water balance analysis is conducted properly for the 3 model areas c. 100% of detected leakage is repaired at the model area	a, b, c. Project Progress Reports	
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model	a. Water distribution is managed based on SOP at the model areas b. Issues on water distribution capacity are reported to top management of SHAPWASCO	a, b. Project Progress Reports	
0) The project is managed and coordinated properly	a. Agreement on the coordination among SHAPWASCO・ GHAPWASCO・MCWW is prepared b. Project activities are regularly monitored based on PO/APO	a. Agreement Document b. Project Progress Reports	

*1 PIs

SOP: a. Energy consumption per m^3 of water production (kWh/m^3) b. Amount of alum sulfate/ chlorine / potassium permanganate used per m^3 of water production (g/m^3)
c. Ratio of effective utilization of raw water (%)

NRW: a. NRW ratio (%) b. Reduction ratio of NRW (%)

WDM: a. Number of complaints per 1000 connections on water suspension and low pressure b. Ratio of inappropriate pressure of water distribution (%) c. Ratio of public opinion mentioning enough pressure (%)

Activities	Inputs	Important Assumption
1-1 Conduct management training for the top management 1-2 Conduct Training of Trainers (TOT) for developing SOP 1-3 Conduct TOT for NRW reduction 1-4 Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops 2-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates 2-2 Select 3 model facilities in Gharbia and Minufia Governorates each 2-3 Organize SOP teams 2-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate 2-5 Revise SOPs of Sharkiya Governorate, if necessary 2-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO 2-7 Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance 2-8 Monitor the progress of SOP activities 2-9 Draft the policy/plan for disseminating SOP to the other Marakazes 3-1 Analyze the current situation on NRW in Gharbia and Minufia Governorates 3-2 Select 3 model areas for NRW reduction in Gharbia and Minufia Governorates each 3-3 Organize NRW reduction teams 3-4 Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO 3-5 Conduct training on general practice of NRW reduction 3-6 Conduct training at the training yard in Sharkiya Governorate 3-7 Conduct training at model areas for water distribution management in Sharkiya Governorate 3-8 Prepare GIS drawing for model areas in Gharbia and Minufia Governorates 3-9 Make water balance analysis at model areas 3-10 Conduct leakage detection survey at model areas 3-11 Make water balance analysis after repair works 3-12 Draft policy/plan for disseminating NRW reduction activities to the other Marakazes 4-1 Discuss methods and conduct survey for water distribution management 4-2 Conduct training for water distribution management 4-3 Formulate a plan for water distribution management 4-4 Install the equipment for water distribution management at the model area 4-5 Operate the system 4-6 Develop SOP for water distribution management 4-7 Evaluate the operation and SOP for water distribution management 0-1 Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW 0-2 Discuss the contents, the manners for the cooperation among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee 0-3 Organize JCC at least once a year 0-4 Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first Joint Coordination Committee (JCC) 0-5 Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC 0-6 Monitor the progress of PO/APO and achievement of the Indicators of the PDM	**Japanese side** 1) Japanese Experts ・Chief advisor/water supply planning ・NRW reduction management ・Leakage detection ・Water Treatment ・Water quality ・Electrical equipment ・Mechanical equipment ・Distribution network ・Others (if necessary) 2) Local Expert 3) Equipment 4) Training in Japan 5) Local Cost **Egyptian side** 1) Counterpart Personnel ・Project Director: Chairman, HCWW ・Project Manager: Vice Chairman, HCWW ・Co-Project Manager: Chairman, SHAPWASCO Chairman, GHAPWASCO Chairman, MCWW ・SOP Team ・NRW Team 2) Office space and facilities for the experts 3) Equipment 4) Necessary Information 5) Local Cost	Budget for the Project is allocated as planed by HCWW, SHAPWASCO, GHAPWASCO, and MCWW 【Pre-condition】 Budget for HRD is allocated properly to SHAPWASCO, GHAPWASCO and MCWW by HCWW

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area — Annex-3

Plan of Operation (PO-3) — 30 October 2013

	Items	Year1				Year2				Year3				Year3				Person in Charge	Major Input		Remarks
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		Japan	Egypt	
1. Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened																					
1-1.	Conduct management training for the top management			☆														HC, SH, G,M	☆ Training in Japan		
1-2.	Conduct Training of Trainers (TOT) for developing SOP			☆														SH, G,M	JICA Experts Local Exerts ☆ Training in Japan		Year 1: Mainly for SH Year 3: Mainly for G, M
1-3.	Conduct TOT for NRW reduction			☆														SH, G,M	JICA Experts Local Experts ☆ Training in Japan		
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops																	HC, SH, G,M	JICA Experts		
2. Based on the experiences of SHAPWASCO, SOPs are development and utilized at the model facilities in Gharbia and Minufia Governorates																					
2-1.	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates																	G,M	JICA Experts	SH	
2-2.	Select 3 model facilities in Gharbia and Minufia Governorates each																	G,M	JICA Experts	SH	
2-3.	Organize SOP teams																	G,M	JICA Experts	SH	
2-4.	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate																	G,M	JICA Experts	SH	
2-5.	Revise SOPs of Sharkiya Governorate, if necessary																	G,M	JICA Experts	SH	
2-6.	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO																	G,M	JICA Experts	SH	
2-7.	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance																	G,M	JICA Experts	SH	
2-8.	Monitor the progress of SOP activities																	G,M	JICA Experts	SH	
2-9.	Draft the policy/plan for disseminating SOP to the other Marakazes																	G,M	JICA Experts	SH	
3. The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates																					
3-1.	Analyze the current situation on NRW in Gharbia and Minufia Governorates																	G,M	JICA Experts	SH	
3-2.	Select 3 model areas in Gharbia and Minufia Governorates each																	G,M	JICA Experts	SH	
3-3.	Organize NRW reduction teams																	G,M	JICA Experts	SH	
3-4.	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO																	G,M	JICA Experts	SH	
3-5.	Conduct training on general practice of NRW reduction																	G,M	JICA Experts	SH	
3-6.	Conduct training at the training yard in Sharkiya Governorate																	G,M	JICA Experts ☆ Training in Japan	SH	
3-7.	Conduct training at model areas for water distribution management in Sharkiya Governorate																	G,M	JICA Experts	SH	
3-8.	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates																	G,M	JICA Experts	SH	
3-9.	Make water balance analysis at model areas																	G,M	JICA Experts	SH	
3-10.	Conduct leakage detection survey at model areas																	G,M	JICA Experts	SH	
3-11.	Make water balance analysis after repair works																	G,M	JICA Experts	SH	
3-12.	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes																	G,M	JICA Experts	SH	
4. The water distribution management capacity is improved in Sharkiya governorate as an advanced model																					
4-1.	Discuss methods and conduct survey for water distribution management																	SH	JICA Experts		
4-2.	Conduct training for water distribution management							☆										SH	JICA Experts ☆ Training in Japan		
4-3.	Formulate a plan for water distribution management																	SH	JICA Experts		
4-4.	Install the equipment for water distribution management at the model area																	SH	JICA Experts		
4-5.	Operate the system																	SH	JICA Experts		
4-6.	Develop SOP for water distribution management																	SH	JICA Experts		
4-7.	Evaluate the operation and SOP for water distribution management																	SH	JICA Experts		
0. The project is managed and coordinated properly																					
0-1.	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW																	HC, SH, G, M	JICA Experts		
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee																	HC, SH, G, M	JICA Experts		
0-3.	Organize the Joint Coordination Committee (JCC) meeting at least once a year																	HC, SH, G, M	JICA Experts		
0-4.	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC																	HC, SH, G, M	JICA Experts		
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC																	HC, SH, G, M	JICA Experts		
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM							●					▲					HC, SH, G, M	JICA Experts		● Mid-Term Review ▲ Final Evaluation

Minutes of Meeting
on
The 5th JCC
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

The 2nd of March 2014

Mr. Mamdouh Raslan
Project Director
Chairman
Holding Company for Water and Wastewater (HCWW)

Dr. Salah Bayoumi
Project Manager
Vice Chairman
Holding Company for Water and Wastewater (HCWW)

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

Mr. Ayman Abd El Kader
Project Co-Manager
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Mr. Mahmoud Zaki
Project Co-Manager
Chairman
Gharbia Potable Water and Sanitation Company (GHAPWASCO)

Mr. Mohamed Naguib
Project Co-Manager
Chairman
Minufia Company for Water and Wastewater (MCWW)

The fifth meeting of the Joint Coordinating Committee (JCC) was held on the 2nd of March 2014 for the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply (hereinafter referred to as "the Project"). The following were confirmed in the meeting:

1. Results of Terminal Evaluation

The JICA Evaluation Team for terminal evaluation of the Project, headed by Mr. Omura, presented results of evaluation and encouraged the Egyptian side for technology dissemination and continuous improvement of activities. A submitted report by the evaluation team was confirmed by the Egyptian side and JICA Expert Team (JET) through the separated Minutes of Meeting for the evaluation and further activities of the Project Team, HCWW, SHAPWASCO, GHAPWASCO and MCWW.

2. Schedule for WDM

Due to delay of WDM activities, it may be difficult to promote the skills of C/P members for WDM especially for data analysis, production control and recommendation of facilities modification. The Project Manager, therefore, requested JICA to extend the period for WDM. JICA side will convey the request to JICA headquarters for examination.

(end)

Annex : List of Participant

List of Participant

[Egyptian Side]

Mr. Mamdouh Raslan	Chairman of HCWW
Dr. Salah Bayoumi	Vice Chairman of HCWW
Dr.Rifaat Abdel Wahaab	Head, Research & Development (R & D) Sector, HCWW
Mr. Ayman Abd El Kader	Chairman of SHAPWASCO
Mr. Mahmoud Zaki	Chairman of GHAPWASCO
Mr. Mohamed Naguib	Chairman of MCWW
Mr. Alae El Din Mohamed	Head of C/P Team/Headquarters of SHAPWASCO
Mr. Mostafa Ibrahim	WDM team/Headquarters of SHAPWASCO
Mr. Adel Attia	Vice Chairman of GHAPWASCO
Mr. Ahmed El Maleh	Head of SOP Team of GHAPWASCO
Mr. Ahmed Rabee'	Head of NRW Team of GHAPWASCO
Mr. Omar Salah	NRW Team of GHAPWASCO
Mr. Ayman Bassyouni	Head of SOP Team of MCWW
Mr. Mohamed Fawzy	SOP Team of MCWW
Mr. Mohamed El Shafee	Head of NRW Team of MCWW
Mr. Ahmed El-Shony	NRW Team of MCWW

[Japanese Side]

Mr. Yoshiki Omura	Senior Advisor, JICA
Ms. Momo Fukushima	Global Environment Department, JICA
Mr. Shiro Nakasone	Senior Representative, JICA Egypt Office
Mr. Koichi Mizukusa	Representative, JICA Egypt Office
Mr. kenji Takada	Representative, JICA Egypt Office
Ms. Emi Yoshinaga	JICA Evaluation Team
Mr. Katsumi Fujii	Chief Advisor/Water Supply Planning
Mr. Mitsuhito Omori	Deputy Chief Advisor / NRW Reduction Activity
Mr. Tomohiro Shimizu	Water Treatment System
Mr. Atsushi Kato	Coordinator / Assistant for NRW Reduction Activity
Mr. Nagi Gaber	Facilitator of Project Team
Mr. Mohamed Abouzekry	Facilitator of Project Team
Mr. Mohammed Abd El-Kader	Facilitator of Project Team

Minutes of Meeting
on
The 6th JCC
for
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

The 1st of April 2015

添付3-20

Mr. Mamdouh Raslan Project Director Chairman Holding Company for Water and Wastewater (HCWW)	Dr. Salah Bayoumi Project Manager Vice Chairman Holding Company for Water and Wastewater (HCWW)	Mr. Katsumi Fujii Chief Advisor The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area, Japan International Cooperation Agency (JICA)
Mr. Ayman Abd El Kader Project Co-Manager Chairman Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Mr. Mahmoud Zaki Project Co-Manager Chairman Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Mr. Mohamed Naguib Project Co-Manager Chairman Minufia Company for Water and Wastewater (MCWW)

The sixth meeting of the Joint Coordinating Committee (JCC) was held on the 1st of April 2015 for the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply (hereinafter referred to as "the Project"). The following were confirmed in the meeting:

1. Results of Terminal Evaluation

The JICA Evaluation Team for terminal evaluation of the Project, headed by Mr. Omura, presented the results of evaluation and encouraged the Egyptian side for technology dissemination and continuous improvement of activities. The report separately submitted by the evaluation team was confirmed by the Egyptian side and JICA Expert Team (JET).

2. Termination of the Project

The Project will be terminated in April 2015 for the field activities in Egypt. JET will prepare and submit the Project final report by the beginning of May 2015, based on discussions with the Egyptian side which have been made so far.

JICA will deliver the report after confirmation as follows:

- Main Report (in English); 12 copies
- Supporting Report (in English); 12 copies
- Main Report (Arabic Translation); 20 copies

(end)

Annex : List of Participant

List of Participant

[Egyptian Side]

Mr. Mamdouh Raslan	Chairman of HCWW
Dr.Rifaat Abdel Wahaab	Head, Research & Development (R & D) Sector, HCWW
Mr. Ayman Abd El Kader	Chairman of SHAPWASCO
Mr. Mahmoud Zaki	Chairman of GHAPWASCO
Mr. Mohamed Naguib	Chairman of MCWW
Mr. Alaa El Din Mohamed	Head of C/P Team/Headquarters of SHAPWASCO
Mr. Mostafa Ibrahim	WDM team/Headquarters of SHAPWASCO
Mr. Tamer Kamel Hussein	WDM team/Headquarters of SHAPWASCO
Mr. Omar Mohamed Salah	NRW Team of GHAPWASCO
Mr. Ayman Bassyouni	Head of SOP Team of MCWW
Mr. Mohamed Fawzy	SOP Team of MCWW
Mr. Ahmed El-Shony	NRW Team of MCWW

[Japanese Side]

Mr. Yoshiki Omura	Senior Advisor, JICA
Ms. Tomoko Kashihara	Global Environment Department, JICA
Mr. Shiro Nakasone	Senior Representative, JICA Egypt Office
Mr. Mariam Yousry	Program Officer
Mr. Katsumi Fujii	Chief Advisor/Water Supply Planning
Mr. Atsushi Kato	Coordinator / Assistant for NRW Reduction Activity
Mr. Nagi Gaber	Facilitator of Project Team

添付資料**-4:**　ステアリング・コミッティ（**SC**）

協議議事録

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 1st Steering Committee held on the 8th of June 2011 at GHAPWASCO

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 1st steering committee on the 8th of June 2011. Contents described in the following pages were confirmed in the committee.

S.Bayoumi

Dr. Salah Bayoumi
Project Manager
Head of Project Sector
Holding Company for Water and Wastewater (HCWW)

For
M.Tsuchiya

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

Mr. Ahmed Abdeen	Mr. Ayman Abd El Kader	Mr. Mohamed Abu El Khair
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater (MCWW)

1. Date, Time, Place and Participants of the Committee

Date: June 8, 2011
Time: 10:00 – 13:00
Place: GHAPWASCO
Participants: As shown in Attachment-1

2. Members of the Steering Committee

The participants confirmed a definition of "Representative, HCWW", which is described as a member of the steering committee in the Record of Discussion singed on the 19th of August 2010, as follows:

Person(s) of HCWW, who is (are) assigned by the Project Manager for specific topics of meeting.

3. Communication Chart for common activities and inter-company cooperation

Communication chart for official communication among HCWW, SHAPWASCO, GHAPWASCO, MCWW and JET were agreed as Attachment-2. It should be utilized for official and common activities among the mentioned organizations.

JET should communicate continuously and directly with the leaders for the Project. However, the Project Manager should be involved for communication on large scale activities such as seminars, workshops, meetings of steering committee and joint coordinating committee. For the meetings of steering committee and joint coordinating committee, the Project team should send agenda and discussion papers in advance to the Project Manager and Project Co-Managers. Internal communication passes within each affiliated company (AC) should be independently prepared by each AC with JET.

4. Confirmation of C/P team members

The participants confirmed that the 3 ACs established counterpart (C/P) teams. JET requested the 3 ACs to allocate full time C/P members (to encourage C/P members to stay usually in offices of the Project team). To accelerate full time presence of C/P members, JET will prepare a weekly schedule sheets and dispatch either SOP experts or NRW experts to GHAPWASCO and MCWW as well as possible.

5. Situations of office set-up

The participants confirmed that the 3 ACs allocated office rooms to the Project team. SHAPWASCO, GHAPWASCO and MCWW declared that they will complete office preparations (such as space, furniture, telephone line, etc.) by the 14th of June 2011.

6. Preliminary plans of the ACs on model/pilot facilities/areas

JET requested the 3 ACs to present preliminary intentions of the Chairmen on model/pilot facilities/areas. The participants confirmed that the 3 ACs will submit the intentions to JET soon.

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JET will examine the intentions for appropriateness for model/pilot facilities/areas. The model/pilot area should be finally selected through discussion and according to general criteria mentioned in the Minuets of Meeting for Inception report (Minutes of Meeting dated the 25th of May 2011).

Final selection of model/pilot facilities/areas should be a subject to be informed to the Project Manager for confirmation.

7. List of equipment to be provided by JICA expert team

JET presented an examination result for water pressure recorder. It is a digital data logger. Since it has no monitor to check the pressure at site, JET requested GHAPWASCO and MCWW to provide ordinal analogue pressure gauges to install together with the digital data logger. GHAPWASCO and MCWW agreed on the JET's examination as well as provision of analogue pressure gauges. As approval of JICA is necessary for the modification, JET will convey the result of discussion to JICA.

The Steering Committee raised other modifications on specifications of metal pipe locator and non metallic pipe vibrator as follows:

1) To modify detection depth of the metal pipe locator from 40cm to 1m or more.
2) To modify non metallic pipe locater from vibrator to ground penetrating radar.

JET will additionally examine the mentioned equipment and will inform the result to the Project Manager and Project Co-Managers for confirmation.

8. Trainings such as seminars and workshop to be done by SHAPWASCO

Trainings such as seminars and workshops to be provided by SHAPWASCO were presented as shown in Attachment-3 for phase-1 of the Project. The participants agreed on the plan.

9. Coordination with IWSP

JET presented agreed points with IWSP team at a meeting held in Tanta on the 28th of May 2011. The participants confirmed that JET and IWSP activities are not duplicated. Confirmed points are as follows:

1) IWSP team will not touch data acquisition and analysis in deep for water distribution management for SHAPWASCO.
2) IWSP team will focus on sewerage activities for SOP and conduct SOP activities at two sewage treatment plants in GHAPWASCO.
3) IWSP team will concentrate strategy formulation rather than site skill improvement for NRW reduction. Furthermore, IWSP team will not provide equipment for leak detection. Covering fields of IWSP team and JET will not be principally duplicated for NRW reduction.

The Project Manager announced that USAID project for management improvement of MCWW will be continued in another fiscal year (July 2011 – June 2012). The participants agreed that MCWW,

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USAID team and JET should have a meeting to exchange information and to coordinate activity programs.

10. Initial agreement on cost sharing among the ACs

The participants confirm that costs necessary for trainer dispatch from SHAPWASCO and training in SHAPWASCO will be shared by the 3 ACs. It will be discussed by Chairmen of the 3 ACs for each training.

11. Training in Japan for Top Management

The participants agreed on Tentative Plan-1, which is shown in Attachment-4, for timing of the Training in Japan. However, the Egyptian side strongly requested to increase period of stay in Japan, in order to observe more situations of water supply in Japan. Moreover, the Egyptian side requested to increase number of trainees from four to five, in order to include the Project Manager. JET requested the Egyptian side to submit needs for training (purpose, expected contents, etc.) to verify the necessity. The participant agreed that the Project Manager will submit the needs to JET within a few days and that JET will convey it to JICA headquarters upon the verification.

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Attachiment-1

Attendance List of the Steering Committee, June 8, 2011

Ser. No	Name	Position	Tel
HCWW			
1	Dr. Salah Bauomi	Head of Project Sector, HCWW - Project Manager	0123491306
2	Mr. Sayed Hasanin Abd El Rahman	General Manager of Waste Water, HCWW	0123247162
3	Mr. Gamal El Housaini	HCWW	0107752316
4	Mr. Osama Abd El Rahman	Coordinator of IWSP and WWSS, HCWW	0123943134
5	Mr. Ahmed Mohamed Rabie	Technical Sector, HCWW	0100022404
SHAPWASCO			
6	Mr. Ahmed Abdeen	Chairman, SHAPWASCO - Project Co-Manager	0103448510
7	Mr. Alaa El Deen Mohamed Ali	Head of Information Center and Decision Strength Sector, SHAPWASCO	0182378564
8	Mr. Abd El Shafi Abd El Aziz	Manager of SOP Department, SHAPWASCO	0161512790
GHAPWASCO			
9	Mr. Ayman Abd El Kader	Chairman, GHAPWASCO - Project Co-Manager	0101431314
10	Mr. Abd Alah El Laithey	Vice Chairman, GHAPWASCO	0102223890
MCWW			
11	Mr. Mohamed Abu El Khair	Chairman, MCWW - Project Co-Manager	0122508721
12	Mr. Samir Abd El Monaem	Head of Planning Sector, MCWW	0106262932
13	Mr. Belal Galal	General Manger of Water Loss, MCWW	0113412137
14	Mr. Ayman Basiouni	Operation and Maintenance Sector, MCWW	016123247162
JET			
15	Mr. Katsumi Fujii	Chief Advisor, JICA expert team	01516228816
16	Mr. Mitsuhito Omori	Deputy Chief Advisor, JICA expert team	01518693460
17	Mr. Mohamed Nagi Gaber	Facilitator, JICA expert team	0122181101

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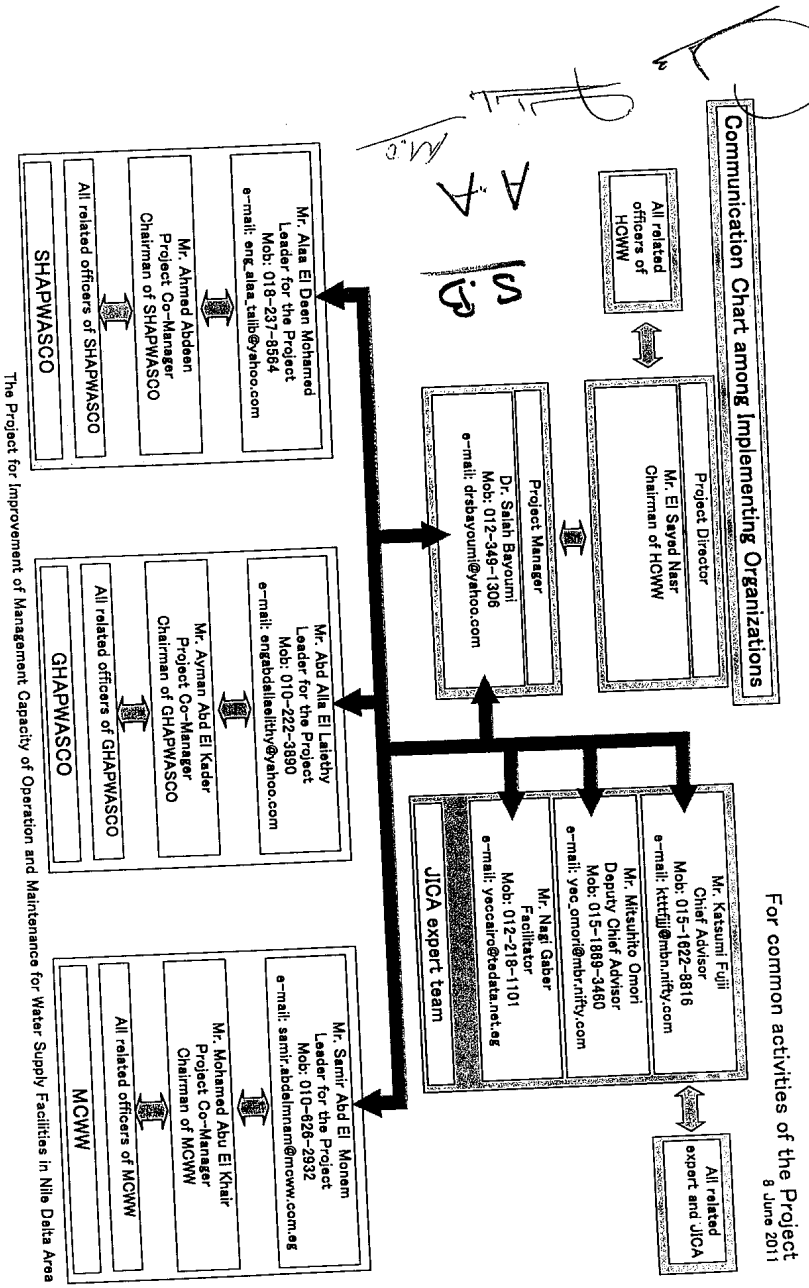
Attachiment-2



Attachment-3

Trainings to be Provided by SHAPWASCO for Phase-1

1. Mini-seminar for SOP

To provide necessary information for understanding SOP activities.

(1) 8 June 2011 for GHAPWASCO

(2) 9 June 2011 for MCWW

2. Mini-seminar for NRW

To present experiences and activities of NRW reduction.

(1) 18 June 2011 for GHAPWASCO

(2) 19 June 2011 for MCWW

3. Mini-workshop for selection of model facilities/areas for SOP and NRW

To present experiences and activities for selection of model facilities/areas.

(1) 2 July 2011 for GHAPWASCO for both SOP and NRW

(2) 3 July 2011 for MCWW for both SOP and NRW

4. Seminar for all ACs in Nile Delta

To present experiences and results of the previous project as well as self-effort after the project. To present plans of GHAPWASCO/MCWW for this Project as well as announcement of activity commencement.

(1) Middle of September 2011 in Tanta (22 September 2011 is proposed by K. FUJII.)

5. Site Observation Tour

To present activities and improved condition at sites of SHAPWASCO.

(1) Middle of October in Sharkiya, one day for both SOP and NRW.

6. Workshop on Meters

To facilitate a workshop in GHAPWASCO/MCWW on meter function and structure.

(1) one day of November for GHAPWASCO

(2) one day of November for MCWW

7. Training on Leakage Detection

To provide training on leakage detection at training yard in SHAPWASCO.

(1) From January to March 2012

(2) Details of training period and capable number of trainee at one training course: to be presented later by SHAPWASCO

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Attachment-4

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Program of Training in Japan

Course: Management Training

Participants: Mr. El Sayed Nasr, Chairman of Holding Company for Water and Wastewater (HCWW)
Mr. Ahmed Abdeen, Chairman of Sharkiya Potable Water and Sanitation Company (SHAPWASCO)
Mr. Ayman Abd El Kader, Chairman of Gharbia Potable Water and Sanitation Company (GHAPWASCO)
Mr. Mohamed Abu El Khair, Chairman of Minufia Company for Water and Wastewater (MCWW)

Tentative Plan -1

Date		Time	Activity	Location
1-Oct	Sat		Departure from Cairo.	
2-Oct	Sun		Arrival at Tokyo.	
3-Oct	Mon		Orientation by JICA.	JICA/TIC
4-Oct	Tue		Workshop to be held by IWA-ASPIRE	Tokyo International Forum
5-Oct	Wed	10:30-12:00	Introduction of national policy and governing organization for water supply. Opinion exchange with the Japanese officials.	Ministry of Health, Labor and Welfare
		15:00-17:00	Introduction of Japan Water Works Association and system for information/technology transfer among water supply service providers. Opinion exchange for technology development.	Japan Water Works Association
6-Oct	Thu	10:30-12:00	Opinion exchange for service and human resources development with a water supply service provider.	Yokohama city / Kanagawa province
		15:00-16:30	Site observation of a water treatment plant.	Yokohama city / Kanagawa province
7-Oct	Fri		Closing ceremony and opinion exchanges with JICA.	JICA/TIC
8-Oct	Sat		Departure from Tokyo.	
9-Oct	Sun		Arrival at Cairo.	

Tentative Plan -2

Date		Time	Activity	Location
13-Oct	Sat		Departure from Cairo.	
14-Oct	Sun		Arrival at Tokyo.	
15-Oct	Mon		Orientation by JICA.	JICA/TIC
16-Oct	Tue	10:30-12:00	Introduction of national policy and governing organization for water supply. Opinion exchange with the Japanese officials.	Ministry of Health, Labor and Welfare
		15:00-17:00	Introduction of Japan Water Works Association and system for information/technology transfer among water supply service providers. Opinion exchange for technology development.	Japan Water Works Association
17-Oct	Wed	10:30-12:00	Opinion exchange for service and human resources development with a water supply service provider.	Yokohama city / Kanagawa province
		13:30-15:00	Opinion exchange for promoting efficiency of service and experienced efforts.	Yokohama city / Kanagawa province
18-Oct	Thu	13:00-15:00	Site observation of a water treatment plant.	Yokohama city / Kanagawa province
19-Oct	Fri		Closing ceremony and opinion exchanges with JICA.	JICA/TIC
20-Oct	Sat		Departure from Tokyo.	
21-Oct	Sun		Arrival at Cairo.	

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The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 2nd Steering Committee held on the 12th of September 2011 at HCWW

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 2nd steering committee on the 12th of September 2011. Contents described in the following pages were confirmed in the committee.

S. Bayoumi

Dr. Salah Bayoumi
Project Manager
Head of Project Sector
Holding Company for Water and Wastewater (HCWW)

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

Abddeen

Mr. Ahmed Abdein
Project Co-Manager
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Mr. Ayman Abd El Kader
Project Co-Manager
Chairman
Gharbia Potable Water and Sanitation Company (GHAPWASCO)

Mr. Mohamed Abou El Kheir
Project Co-Manager
Chairman
Minufia Company for Water and Wastewater (MCWW)

1. Date, Time, Place and Participants of the Committee

Date: the 12th of September 2011
Time: 11:00 – 15:00
Place: HCWW
Participants: As shown in Attachment-1

1. Candidate Trainees for Training in Japan for SOP and NRW

(1) Approval of the Candidate Trainees

The Chairmen of the 3 ACs presented their selection results as follows:

Organization	Field	Name of Candidate
SHAPWASCO	SOP	Mr. Ahmed Saeed
	NRW	Mr. Saeed Mohamed Attia
GHAPWASCO	SOP	Mr. Nagi Yousri
	NRW	Mr. Ahmed Elsayed Rabie
MCWW	SOP	Mr. Mohamed Fathy Gaber
	NRW	Mr. Mohamed Mostafa El Shafie

The participants approved the candidate trainees. JET will start interview them for their detail plan for the training. However, JET requested the following:

- The candidate trainee should be a member of the SOP/NRW.
- If not, the candidate trainee should be involved in the SOP/NRW team.

(2) Request to Add One Person from HCWW

The Egyptian side requested JICA expert team (JET) to increase the number of trainee as follows:

- In order to disseminate the technology in whole Nile Delta or Egypt, it is necessary to train staff members of HCWW.
- NRW reduction activities have been commenced nationwide. However, progress of SOP dissemination is not well.
- In order to accelerate the dissemination of SOP, it is requested to add one person to the training from HCWW.

JET answered that it is difficult to increase the number of candidates in this stage. However, JET agreed to deliver the request to JICA headquarters.

2. Delivery of the Equipment and Responsibility for the Equipment

(1) Inspection Sheet and Receipt of the PCs

JICA Egypt Office requested the following on the delivered PCs (1 desk top PC, 2 notebook PCs, 3

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sets of Microsoft Office and 3 sets of Norton360) to GHAPWASCO and MCWW:

- GHAPWASCO and MCWW are requested to sign on inspection sheets and"certificate of handover".
- The inspection sheets are possible to be signed by anyone of GHAPWASCO/MCWW. However, the certificate of handover should be signed by Chairman of GHAPWASCO/MCWW.
- Especially, the inspection sheets should be completed promptly.

GHAPWASCO/MCWW received the remained equipment (Microsoft Office; 3 sets for each organization) and answered as follows:

- Inspection should be done on the 13th of September 2011 at each of GHAPWASCO and MCWW by their IT staff member(s).
- Certificate of Handover should be signed by the Chairmen after the inspection.

The participants confirmed that such procedures will be necessary for all the equipment to be delivered by JICA to the Egyptian side, as well as for delivered photocopy machines and pick-up trucks.

(2) Display for the Desk Top PCs

The participants discussed displays for the desk top PCs, which have not yet been delivered. The participants agreed on the following:

- JICA Egypt Office should purchase and deliver the display (one for each of GHAPWASCO and MCWW).
- Until the mentioned delivery, GHAPWASCO and MCWW should provide displays for temporary uses to their project teams.

(3) Consignee and Custom Clearance of the Equipment to be delivered from Japan

JET informed that all the equipment procured from Japan will be delivered to the Project Manager. JET also requested the Egyptian side to undertake custom clearance and inland transportation. The Egyptian side agreed to undertake such activities.

(4) Responsibility of the Equipment for O&M

JET reminded that all the equipment (delivered or to be delivered) should be managed properly by SHAPWASCO/GHAPWASCO/MCWW for O&M, which includes procurement of consumables and maintenance/repair. The participants confirmed that each of SHAPWASCO/GHAPWASCO/MCWW should be responsible for the equipment upon the delivery.

3. Schedule of the Project

(1) JET's explanation

JET informed the schedule until December 2011 and the participants agreed on it basically (comments and modifications are mentioned in the next clauses). The informed schedule is as follows:

1) Major Activities

a) SOP

- Selection of model facilities.
- Preparation of system drawings for the model facilities.
- Commencement of trial operation according to draft SOP.
- Clarification of necessary equipment for SOP (flow meter).

b) NRW

- Selection of model areas in Markaz level.
- Organizing NRW team in branch office / network department for the selected model areas.
- Preparation of GIS drawings for the model areas.
- Preparation of chambers for MNF survey.

c) WDM

- Lecture and discussion on method, purpose and necessary equipment for WDM.
- Plan of management activity (items to be managed and purpose of the project).
- Selection of pilot area.
- Outline plan on facilities and equipment for the pilot project

d) TOT

- 3days course of TOT will be done for SHAPWASCO staff members (12 persons basically) at SHAPWASCO's training room.
- It is for general training for speech, presentation, etc.
- It will be conducted in October 2011 by a local instructor (to be arranged by JET).

2) Important Event

a) Steering Committee: 12 September 2011

b) JCC: 26 September 2011

c) Seminar for whole Nile Delta: 26 September 2011

3) Mini Seminars/Workshops to be organized by SHAPWASCO

a) Site Observation tour in SHAPWASCO (tour for SOP & NRW sites, people of GHAPWASCO and MCWW should be invited) in the middle of October 2011.

b) General training for practice of NRW reduction activity in the end of October.

c) Workshop on meters in November.

(2) Comments, Modifications and Agreement

1) JCC and Seminar

a) The participants agreed that JCC and the seminar should be conducted on the same day at Tanta. For the detail such as program and place should be discussed further among HCWW, the 3 ACs and JET prior to the JCC and seminar as well as contents of presentation.

b) As for the date of JCC and the seminar, the participants agreed that it should be modified to be the 27th of September 2011.

C) The participants discussed appropriate number of the invited persons to the seminar. It was concluded that 50 – 80 persons are appropriate, including JICA and JET. The participants confirmed that invited ACs are basically potable water and sanitation companies for Dakahilia, Domiatta, Kafr El Sheikh and Behaira.

d) The participants confirmed that small issues will not be discussed in JCC. JET should prepare draft program of JCC and submit it to the Project Manger for confirmation before JCC.

2) Participants to TOT

The Chairman of SHAPWASCO asked JET whether it is possible to increase the number of trainees up to 20 -25. JET answered that such training should be conducted for the trainer team of SHAPWASCO. However, JET added that it is possible for other persons to attend the TOT as observers.

3) Project Team Meeting and/or Presentation to Top Management

The Egyptian side commented that progress/result of model area/facility should be presented to the Chairman of each AC. JET answered that the presentations have been conducted in the Project team meeting (PTM) and it has been conducted since the beginning of the Project. Due to business of the Chairmen, their attendances have not been realized. The participants reminded themselves that the Project team should continue to organize PTMs monthly/by stage and according to request of the Chairmen.

4. Additional Activities to Promote Public Awareness

JET proposed to add activities for public awareness to the Project. The Egyptian side is willing to add it, however they insist that JICA's budget for SOP/NRW should not be reduced (budget of SOP/NRW should not be shifted to the activities for public awareness). Both sides agreed that the activities to promote the public awareness shall be added if the budget for SOP/NRW is not reduced.

Moreover the participants agreed on the following:

- To add the activities for public awareness, the project design matrix (PDM) should be amended.
- To amend the PDM, target and activities should be determined.

- Current social situation in Egypt should be taken carefully into consideration for means and contents of public awareness program.
- General strategy provided by HCWW should be considered in the activities.
- Necessary activities to be cooperated with JICA should be listed by the 3 ACs within PH-1 (phase until March 2012) and it should be screened by the both parties to list operations to be conducted in the Project. In parallel, JET should discuss capable cooperation of JICA with JICA, as well as for budget.
- It is not necessary to rush to conclude the amendment of PDM in the JCC to be held in September 2011. However, it should be finalized within this PH-1 (phase until March 2012) to determine the activities for PH-2.

5. PDM-1 and PO-1

JET presented draft PDM-1 to the participants as a subject to be approved by the next JCC. In the steering committee meeting, small modification was done. It is shown in attachment-2.

JET proposed amendment of annual plan of operation (APO), considering current progress of activities. It is agreed on by the participants. JET should prepare plan of operation (PO) -1 according to the agreed APO.

JET will prepare final PDM-1 and PO-1 and submit it to the Project Manager and JICA headhunters for confirmation before the next JCC.

6. Other Issues

The participants discussed other issues as follows:

- JET requested the 3 ACs to provide a telephone line as well as communication costs. The 3 ACs promised to provide direct lines (on the names of each of the 3 ACs). The participants agreed on the condition, which may exclude services for mobile and international telephone.
- The Egyptian side requested JET to provide necessary information, within one week, for their trip to Japan. JET answered that JET will investigate it and report it sooner.
- The Egyptian side commented that public awareness should be included in the training in Japan, especially contents of pamphlet/brochure. JET answered that obtainment of pamphlet/brochure is possible in the programmed training.

Attachiment-2

Project Design Matrix (PDM1)

Dated September 27,2011

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Duration : FY2011-FY2013

Project Site : Sharkiya Governorate, Gharbia Governorate, Minufia Governorate (Nile Delta Area)

Target Group : Staff of SHAPWASCO, GHAPWASCO, MCWW

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
【Super Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area	Performance Indicators (PIs) in the fields of management capacity of operation and maintenance are improved in Nile Delta Area	Quarterly Reports of all water supply companies in Nile Delta Area submitted to HCWW	
【Overall Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Central and local government budget for development of water supply facilities is allocated appropriately
【Project Purpose】 Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved at the model areas/facilities	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Governmental policy on water supply sector does not change significantly
【Output】 1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened	a. More than 3 members each of SOP/NRW teams in SHAPWASCO・GHAPWASCO・MCWW are certified as trainers by Steering Committee b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team	a. Certification of Training b. Reports of workshops	Employees who received trainings by the Project will continuously work for SHAPWASCO, GHAPWASCO, MCWW
2) Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates	a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation b. The model facilities are operated and maintained based on SOP c. Improvement of PIs for the model facilities are evaluated based on SOP	a, b, c. Project Progress Reports	Personnel transfer of executive management will not affect the implementation of the Project
3) The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates	a. More than 80% of NRW teams members rates understanding of trainings more than 3 on the 5-scale evaluation b. Water balance analysis is conducted properly for the 3 model areas c. 100% of detected leakage is repaired at the model area	a, b, c. Project Progress Reports	
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model	a. Water distribution is managed based on SOP at the model areas b. Issues on water distribution capacity are reported to top management of SHAPWASCO	a, b. Project Progress Reports	
~~5) Utilizing experiences of SHAPWASCO, skills to promote public awareness is improved for model~~	~~a. Materials to promote public awareness are prepared~~ ~~b. 2 different types of event are organized in each of GHAPWASCO~~	~~a, b. Project Progress Reports~~	

8

Attachiment-1

List of Participants

[Egyptian side]

Mr. El Sayed Nasr	Chairman of HCWW	(only for conclusion stage)
Mr. Mamdouh Raslan	Vice Chairman of HCWW	(only for conclusion stage)
Dr. Salah Bayoumi	Head of Project Sector of HCWW	
Mr. Ahmed Abdein	Chairman of SHAPWASCO	
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
Mr. Mohamed Abou El Khair	Chairman of MCWW	
Mr. Samir Abd El Monem	Head of Sector for Planning & Follow-up, MCWW	

(For the beginning stage to confirm candidate trainees)

Mr. Alaa Abu Talib	Head of Sector for Information & Decision Making Support, SHAPWASCO
Mr. Ahmed Saeed	SOP trainer team, SHAPWASCO
Mr. Saeed Mohamed Attia	NRW trainer team, SHAPWASCO
Mr. Abd Alla El Liethy	Vice Chairman of GHAPWASCO
Mr. Nagi Yousri	SOP team, GHAPWASCO
Mr. Ahmed Elsayed Rabie	NRW team, GHAPWASCO

[Japanese side]

Mr. Koichi Mizukusa	Representative, JICA
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Masahiro Takeuchi	Distribution Network (1)
Mr. Mohamed Nagi Gaber	Facilitator of the Project team

7

~~Governorates~~			
0) The project is managed and coordinated properly	a. Agreement on the coordination among SHAPWASCO・GHAPWASCO・MCWW is prepared b. Project activities are regularly monitored based on PO/APO	a. Agreement Document b. Project Progress Reports	

Activities	Inputs	Important Assumption
1-1 Conduct management training for the top management 1-2 Conduct Training of Trainers (TOT) for developing SOP 1-3 Conduct TOT for NRW reduction 1-4 Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops 2-1 Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates 2-2 Select 3 model facilities in Gharbia and Minufia Governorates each 2-3 Organize SOP teams 2-4 Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate 2-5 Revise SOPs of Sharkiya Governorate, if necessary 2-6 Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO 2-7 Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance 2-8 Monitor the progress of SOP activities 2-9 Draft the policy/plan for disseminating SOP to the other Marakazes 3-1 Analyze the current situation on NRW in Gharbia and Minufia Governorates 3-2 Select 3 model areas for NRW reduction in Gharbia and Minufia Governorates each 3-3 Organize NRW reduction teams 3-4 Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO 3-5 Conduct training on general practice of NRW reduction 3-6 Conduct training at the training yard in Sharkiya Governorate 3-7 Conduct training at model areas for water distribution management in Sharkiya Governorate 3-8 Prepare GIS drawing for model areas in Gharbia and Minufia Governorates 3-9 Make water balance analysis at model areas 3-10 Conduct leakage detection survey at model areas 3-11 Make water balance analysis after repair works 3-12 Draft policy/plan for disseminating NRW reduction activities to the other Marakazes 4-1 Discuss methods and conduct survey for water distribution management 4-2 Conduct training for water distribution management 4-3 Formulate a plan for water distribution management 4-4 Install the equipment for water distribution management at the model area 4-5 Operate the system 4-6 Develop SOP for water distribution management 4-7 Evaluate the operation and SOP for water distribution management ~~5-1 Discuss methods and objectives for promotion of public awareness based on experience in SHAPWASCO~~ ~~5-2 Organize teams to promote public awareness~~	**Japanese side** 1) Japanese Experts ・Chief advisor/water supply planning ・NRW reduction management ・Leakage detection ・Water Treatment ・Water quality ・Electrical equipment ・Mechanical equipment ・Distribution network ・Others (if necessary) 2) Local Expert 3) Equipment 4) Training in Japan 5) Local Cost **Egyptian side** 1) Counterpart Personnel ・Project Director: Chairman, HCWW ・Project Manager: Chairman, SHAPWASCO ・Co-Project Manager: Chairman, GHAPWASCO Chairman, MCWW ・SOP Team ・NRW Team 2) Office space and facilities for the experts 3) Equipment 4) Necessary Information 5) Local Cost	Budget for the Project is allocated as planed by HCWW, SHAPWASCO, GHAPWASCO, and MCWW **【Pre-condition】** Budget for HRD is allocated properly to SHAPWASCO, GHAPWASCO and MCWW by HCWW

~~5-3 Formulate an action plan for activities to promote public awareness~~ ~~5-4 Prepare materials to promote public awareness~~ ~~5-5 Conduct events to promote public awareness~~ ~~5-6 Evaluate the activities to promote public awareness and draft the policy to continue the activities in other area~~ 0-1 Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW 0-2 Discuss the contents, the manners for the cooperation among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee 0-3 Organize JCC at least once a year 0-4 Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first Joint Coordination Committee (JCC) 0-5 Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC 0-6 Monitor the progress of PO/APO and achievement of the Indicators of the PDM		

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 3rd Steering Committee held on the 26th of February 2012 at GHAPWASCO

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 3rd steering committee on the 26th of February 2012. Contents described in the following pages were confirmed in the committee.

S. Bayoumi

Dr. Salah Bayoumi
Project Manager
Head of Project Sector
Holding Company for Water and Wastewater (HCWW)

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

AHMED ABDEIN

Mr. Ahmed Abdein
Project Co-Manager
Chairman
Sharkiya Potable Water and Sanitation Company
(SHAPWASCO)

Ayman abdel Kader

Mr. Ayman Abd El Kader
Project Co-Manager
Chairman
Gharbia Potable Water and Sanitation Company
(GHAPWASCO)

For confirmation of the results
Mr. Mohamed Abou El Kheir
Project Co-Manager
Chairman
Minufia Company for Water and Wastewater
(MCWW)

HOLDING COMPANY FOR WATER AND WASTEWATER

添付4-10

1. Date, Time, Place and Participants of the Committee

Date: the 26th of February 2012
Time: 14:00 – 16:00
Place: GHAPWASCO
Participants: As shown in Attachment-1

2. Confirmation of Participants

Due to sudden and important business, MCWW could not send a representative to the committee meeting. The Project Manager and the participants confirmed the following:

- The Project Manager was informed the absence of MCWW.
- Results of the committee meeting will be delivered later to MCWW.
- The committee meeting is effective. It has been agreed by MCWW.

3. Annual Plan of Operation (APO) for Phase-2

JICA expert team (JET) submitted and explained a draft APO (Attachment-2). It was approved by the committee and agreed to be submitted in the next Joint Coordinating Committee (JCC) for final approval. During the discussions, the following is confirmed by the participants.

(1) Mid-term Evaluation and the 2nd Open Seminar

The participants agreed that the mid-term evaluation and the 2nd open seminar are to be held in October 2012. JET will coordinate the schedule with JICA to keep the mentioned schedule.

(2) Training in Japan for WDM

JET proposed to have "the training in Japan for WDM" in September 2012. The participants agreed on the proposal.

(3) Contents of the 2nd Open Seminar

JET requested the 3 Affiliated Companies (ACs) to show some results of improvement for SOP and NRW at an occasion of the 2nd open seminar. Improvements will give encouragement to C/P members. The Project Manager recommended doing the following:

- For NRW, some improvements could be shown in numerical figures such as improved NRW ratio for one or two area(s).
- For SOP, it could be difficult to show the numerical figures for improvement such as improved efficiency of water. However, it is possible to show preparation of system drawings, installation of meters, etc.

The participants agreed on the request of JET and recommendation of the Project Manager.

HOLDING COMPANY FOR WATER AND WASTEWATER

(4) Schedule for SOP and NRW Activities

The Project Manager requested to finish the planned activities for SOP and NRW as early as possible, so that the Project team can be increase the number of model facilities/areas. JET answered that the Project team has same idea and requested the team members to do so.

(5) Procurement Schedule of Equipment for WDM

JET said that around half year is necessary to procure the equipment for WDM. Even if it is ordered in April 2012, its arrival will be in October / November 2012. The Project Manager responded to the schedule as follows:

- The half year seems too long.
- However it would be suitable if considering necessary preparation works to be undertaken by the Egyptian side, such as chamber construction, arrangement of communication system, etc.

4. The 2nd JCC

The participants confirmed that the 2nd JCC will be held on the 11th of March 2012. Starting time will be fixed soon. (On the 27th of February, it was fixed as 10:30am at HCWW.) Agenda is basically as follows:

- Summary of the progress
- Summary of activity plan for Phase-2
- Comments and discussions on the progress and plan
- Approval of APO for Phase-2

添付4-11

5. Training in Japan for WDM

JET proposed having the training in Japan in September 2012 for WDM. As requested from the beginning of the Project, the Egyptian side asked the increase of trainees from two to four. JET informed that 4 participants would be possible although confirmation of qualification and awareness are required for the candidate trainees. The Egyptian side declared that appropriate persons will be selected for the candidates.

6. Activity to Promote Public Awareness

After the revolution, activities are suspended for public awareness. The Egyptian side is seeking appropriate approaches to the general public for awareness promotion. In order to improve approaches and tools, the Egyptian side would like to include rerated activities in the Project. The Egyptian side considers that some new approaches and tools are required. Water museum would be one of the solutions.

JET informed the following:

- Activities should be linked to performance indicators (PIs), which are managed by HCWW and ACs.

- Sudden additions, without any justification as well as conceptual plan, are difficult in terms of modification of PDM.

Taking the situation into account, the participants confirmed to have the procedures mentioned below:

(1) Study on Necessary Approaches and Tools

The Project conducts collection of information on promotion activities for public awareness, i.e. the approaches and tools in Japan. In parallel, the Project team will make a concept of improvement for activities to promote public awareness.

(2) PDM

No dramatic modifications on the PDM, in the levels of Project Purposes and Outputs, are taken for the time being. One item is added in the Activity level for Output-1 "Human resources development" as follows:

Collect information for public awareness promotion to prepare improvement plans of approaches and tools for publicity.

This addition should be approved in the 2nd JCC. To justify this addition, the Egyptian side provides information on related PIs as well as current conditions before the JCC. JET undertakes the cooperation for this additional study within the currently planned assignment of experts.

(3) Actions for the Study

JET provides information such as examples in May – June 2012. Utilizing the provided information, the Project team prepares a conceptual plan for improvement. The conceptual plans should include the following:

- Approaches by different level of citizens such as adults, students, educated people, less educated people, etc.
- Appropriate Tools for approach

To prepare good plan, the Egyptian side allocate senior persons as C/P members, such as Deputy Chairman of AC.

(4) Actions later than the Study

According to the improvement plan, which is made by the aforementioned study, the Egyptian side may request further cooperation of JICA.

7. Management of Equipment Procured by JICA side

The procurement of equipment has been completed for leak detection. Those are stored in each of GHAPWASCO and MCWW. Since the management rules are too strict to take it out to the sites, it is difficult to conduct site works according to necessity (sometime urgently required). JET requested the Egyptian side to improve the management system. The Egyptian side promises the prompt improvement.

8. Person in Charge of Publicity of the Project

JET requested HCWW to provide a person to be in charge for dissemination of information. It is effective for not only the dissemination of technology to all ACs but also for publicity to the citizens and other donors. Moreover, it will contribute to promotion of sustainability of the Project activities and coordination among ACs. The Project Manager replied that he will consider assigning a person from HCWW.

Attachiment-1

List of Participants

[Egyptian side]

Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahmed Abdein	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Ahmed Saeed	Project Sector of HCWW
Mr. Abd Alla El Liethy	Vice Chairman of GHAPWASCO
Mr. Bassyouny Eissa	Head of Operation & Maintenance Sector, GHAPWASCO

[Japanese side]

Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Hiroki Niimura	Leakage Detection
Mr. Ryoji Nagao	Mechanical Equipment
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Mohamed Abdel Kader Abouzekry	Facilitator of the Project team
Mr. Mohammed Abd El-Kader Abd El-Ghany	Facilitator of the Project team

Attachment-2 APO Phase-2 (26 Feb 2012): Annual Plan of Operation (General Activity)

	Items	2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
Output0:	**The project is managed and coordinated properly**														
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee														
0-3.	Organize the Joint Coordinating Committee (JCC) meeting at least once a year														
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC														
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM														
Output1:	**Human Resource Development through coordination among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened**														
1-2.	Conduct Training of Trainers (TOT) for developing SOP	for SHAPWASCO													
1-2-1.	OJT for training	OJT through SOP assessment													
1-3.	Conduct TOT for NRW reduction	for SHAPWASCO													
1-3-1.	OJT for training	OJT through training practice													
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops														
1-4-1.	Seminars / workshops to be conducted by SHAPWASCO				SOP				SOP	NRW	SOP			SOP	WDM
1-4-2.	Training on water leakage survey and water leakage detection equipments at the training yard in Sharkiya Governorate														
1-4-3.	Open seminars														
	<Equipment Plan>														
	Equipment Procurement (JICA Expert)	Procurement			Transport	Delivery									
	Equipment Procurement (JICA)	Procurment (Water CAD)								Procurment (WDM)					
	<Training in Japan>														
	WDM														

Attachment-2 APO Phase-2 (26 Feb 2012): Annual Plan of Operation (Development of SOP)

	Items	2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates															
Action-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates														
Action-2	Select 3 model facilities in Gharbia and Minufia Governorates each														
Action-3	Organize SOP teams														
Action-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate														
4-1	Assessment of the effectiveness of SOPs in Sharkiya Governorate														
4-2	Extraction of the problematic point														
Action-5	Revise SOPs of Sharkiya Governorate, if necessary														
5-1	Revision of SOPs of Sharkiya Governorate														
Action-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO														
6-1	Examination for the site condition (C/P organization control, Cooparative framework of trainer etc.)														
6-2	Preparation of basic system drawings (P&ID, Single line diagram)														
6-3	Preparation of draft SOPs for O&M with site training														
6-4	Preparation of unified forms of O&M records and reports														
6-5	Examination of water quality management														
6-6	Preparation of draft SOPs for water quality management														
Action-7	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance														
7-1	Applying of SOP on On-the-Job Training														
Action-8	Monitor the progress of SOP activities														
8-1	Monitoring of activity condition on On-the-Job Training														

Attachment-2 APO Phase-2 (26 Feb 2012): Annual Plan of Operation (NRW Reduction)

Items		2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates															
Action-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates														
Action-2	Select 3 model areas in Gharbia and Minufia Governorate each														
Action-3	Organize NRW reduction teams														
Action-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO														
Action-5	Conduct training on general practice of NRW reduction														
5-1	Lecture and site practice in Sharkiya														
Action-6	Conduct training at the training yard in Sharkiya Governorate														
6-1	Training on water leakage survey and water leakage detection equipments at the training yard in Sharkiya Governorate														
Action 7	Conduct training at model areas for water distribution management in Sharkiya Governorate														
Action-8	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates														
8-1	Preparation of GIS drawing on model area-1														
8-2	Preparation of GIS drawing on model area-2														
8-3	Preparation of GIS drawing on model area-3														
Action-9	Make water balance analysis at model areas														
9-1	Conducting Minimum Night Flow (MNF) survey for candidate pilot area														
9-2	Determining pilot project area for each model area (Markaz)														
9-3	Making field survey of distribution network			Model area-1				Model area-2					Model area-3		
9-4	Conducting Water flow measurement				Model area-1					Model area-2				Model area-3	
9-5	Measuring metering error for working and waste in the house				Model area-1					Model area-2				Model area-3	
9-6	Making Water balance analysis before repair works					Model area-1					Model area-2			Model area-3	
Action 10	Conduct leakage detection survey at model areas														
10-1	Conduct leakage detection survey at model areas						Model area-1					Model area-2			
10-2	Repairing leaking parts						Model area-1					Model area-2			
10-3	Improvement of water meter condition						Model area-1								
Action 11	Make water balance analysis after repair works														
11-1	Conducting Water flow measurement							Model area-1					Model area-2		
11-2	Making water balance analysis after repair works and evaluation								Model area-1					Model area-2	

Attachment-2 APO Phase-2 (26 Feb 2012): Annual Plan of Operation (Distribution Management for SHAPWASCO)

Items		2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
The water distribution management capacity is improved in Sharkiya Governorate as an advanced model															
Action-3	Formulate a plan for water distribution management														
3-1	Planning of action plan														
3-4	Outline plan for equipment and equipment installation														
3-5	Preparation for equipment installation including isolation work														
3-6	Preparation for equipment specification (one of procurement procedures)														
3-7	Verification of equipment plan														
3-8	Plan of target flow, pressure and quality of water by block														
3-9	Survey on current condition (summer) by block														
3-10	Verification of Plan of target flow, pressure and quality of water by block														
3-11	Training in Japan														
Action-4	Install the equipment for water distribution management at the model area														
	Preparation for space for monitoring room														
	Preparation for communicating system														
	Chamber construction by SHAPWASCO														
	JICA procedures for equipment procurement														
	Installation of the equipment														
Action-5	Operate the system														
	Trial operation of the system														
	Trial modification of distribution mode														
	1st evaluation of the system														

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 4th Steering Committee held on the 16th of July 2012 at HCWW

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 4th steering committee on the 16th of July 2012. Contents described in the following pages were confirmed in the committee.

S. Bayoumi

Dr. Salah Bayoumi
Project Manager
Head of Project Sector
Holding Company for Water and Wastewater (HCWW)

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

Ahmed Abdeen

Mr. Ahmed Abdeen
Project Co-Manager
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Ayman abd el Kader

Mr. Ayman Abd El Kader
Project Co-Manager
Chairman
Gharbia Potable Water and Sanitation Company (GHAPWASCO)

Mr. Mohamed Abou El Kheir
Project Co-Manager
Chairman
Minufia Company for Water and Wastewater (MCWW)

1. Date, Time, Place and Participants of the Committee

Date: the 16th of July 2012
Time: 10:00 – 13:30
Place: HCWW
Participants: As shown in Attachment-1

2. Report of agreement between the Egyptian and the Japanese sides on WDM pilot project for SHAPWASCO

JET reported the following and the participants confirmed the agreed pilot project for WDM for SHAPWASCO:

(1) JICA mission

In a period from 1-July to 5-July, 2012, JICA officials (Mr. Omura and Mr. Hamano) visited the project sites. During the visit, contents and activities are discussed with HCWW and SHAPWASCO for WDM pilot project.

(2) Agreed activities for WDM pilot project

1) Pilot area: Zagazig
2) Pilot DMA: Area-4
3) Telemetering pressure monitoring: 10 locations in Zagazig
4) Telemetering flow monitoring: 7 locations at borders of Area-4
5) Telemetering well production flow monitoring: 7 wells in Area-4
6) Telemetering WTP operation monitoring for in/out-flows, out-flows pressure, water level of reservoir
7) Data based operation (operation according to outlet pressure) for 17 wells in Zagazig
8) Data acquisition and analysis as well as formulation of operation plans for WTP and wells
9) Trials for optimum operation of WTP and wells

3. Progress and issues on NRW and SOP for GHAPWASCO and MCWW

(1) Progress

JET reported the progress of SOP and NRW activities being conducted in GHAPWASCO and MCWW. The participants confirmed the following:

1) JET provided two flow meters in July. One for GHAPWASCO was fixed on the 11th of July. The other for MCWW will be fixed in this July.
2) The project team has commenced the trial records of operation data according to the draft SOP as well as reviewing the draft SOP.
3) For GHAPWASCO-NRW, the minimum night flow survey (MNF) has been completed for nine sites and three pilot project sites were selected in each of the three Markazes. Among

A-A

S.B

E.E

the three pilot project sites, the water balance survey analysis was finished for the two sites. The progress is a little bit ahead of the schedule. It is expected to be possible to proceed to the next step (leak detection) in September.

4) For MCWW-NRW, among the nine sites, eight sites are completed for chamber construction, and MNF has been completed for seven sites. The chamber for the remained one site will be completed by the end of July. Since the C/P team members were trained for MNF method, MNF for the remained two sites are expected to be completed by the C/P team members by the end of August. Utilizing the data obtained until now, the first session for water balance analysis is now being conducted. The project team is making efforts to proceed to the leak detection in September.

(2) Modification of SOP model facility in GHAPWASCO

Chairman of GHAPWASCO stated the intention to replace a model facility (Tanta old WTP) with the Tanta new WTP (El Teraa El Melahia WTP) under the following reasons:

1) El Teraa El Melahia WTP was handed over on the 7th of July. However, manuals and records for O&M are not sufficient. SOP preparation is urgently required.
2) Total eight plants, including El Teraa El Melahia WTP, have been conducted for construction under the similar design (three plants among the eight were handed over). SOP for El Teraa El Melahia WTP will be effective for extension of SOP to other seven plants.
3) In the record of discussions, signed on the 19th of August 2010, the number of the model facility is mentioned at three (basically one WTP, one iron/manganese removal facility and one well). GHAPWASCO intends, therefore, to replace the model facility with El Teraa El Melahia WTP.

The participants agreed on the following process for the mentioned modification:

1) All participants agreed on the proposal. However, the modification should be agreed on by the next JCC meeting.
2) Tanta old WTP will be a subject for the SOP development through GHAPWASCO efforts, utilizing the skills of El Teraa El Melahia WTP.
3) Until the official approval by JCC, the project team conducts the SOP activities for both Tanta old WTP and El Teraa El Melahia WTP.
4) Regardless of approval for the replacement of the model facilities, JET continues the supporting activities for Tanta old WTP.

(3) Ways to solve small Issues

The participants confirmed that small issues, which should be solved in the affiliated company, should be managed as follows:

1) To discuss inside the project team.
2) To undertake the necessary actions by C/P team.

3) To discuss it with the Chairman after one week (within two weeks for maximum), when the necessary actions are not undertaken well.

4. Overall schedule of Phase-2

Since JICA experts were absent from the middle of May to the end of June due to JICA restriction, some activities are behind the schedule. Accordingly, JET proposes the modification of the schedule. After discussion and confirmation, the participants agreed on the modification basically as shown in Attachment-2 and 3.

JET proposed the schedule of the training in Japan for WDM to be held from the 29th of October to the 8th of November (excluding travelling days). The participants agreed on the schedule.

5. Schedule of the mid-term evaluation & open seminar

As the schedule is slightly behind, it is difficult to have a good interim result before October 2012 to be evaluated in the mid-term evaluation (currently planned to be held in October). The participants agreed on the schedule of the mid-term evaluation as well as the open seminar as follows:

1) To hold the mid-term evaluation and the open seminar in the middle - end of November. It should be discussed with JICA through JET.
2) To consider the "Eid El Adha (holidays in the end of October), availability of JICA Officials and period of the training in Japan for WDM for final decision of the schedule.

(end)

Attachiment-1

List of Participants

[Egyptian side]	
Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahmed Abdeen	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Mohamed Abou El Kheir	Chairman of MCWW
Mr. Alaa El Din Taleb	SHAPWASCO
Mr. Mohamed Atef	SHAPWASCO
Mr. Mostafa Ibrahim	SHAPWASCO
Mr. Abd El Raheem Mohamed	SHAPWASCO
Mr. Adel Attia	GHAPWASCO
Mr. Ahmed Elsayed Rabie	GHAPWASCO
Mr. Ahmed El Maleh	GHAPWASCO
Mr. Ayman Bassyouny Abdeen	MCWW
Mr. Bilal Galal Khalaf	MCWW
[Japanese side]	
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Mitsuhito Omori	Deputy Chief Advisor / NRW Reduction Management
Mr. Tomohiro Shimizu	Water Treatment System
Dr. Sayed Osman Madbouly	Electrical Equipment
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Mohamed Abdel Kader Abouzekry	Facilitator of the Project team
Mr. Mohammed Abd El-Kader Abd El-Ghany	Facilitator of the Project team
Dr. Mostafa Moawed Mostafa	Local expert
Mr. Ahmed Atef	Interpreter
Mr. Ahmed Alaa Rasmy	Interpreter

A-A S.B Ayman E.E

Revision 31-May-2012 **Staffing Schedule for JICA Experts** **Attchment-2**

	Title	Name		Phase-2												2013			Man-days
				2	3	4	5	6	7	8	9	10	11	12	1	2	3		
Experts of the Japanese Side																			
1	Chief Advisor/Water Supply Planning	Katsumi FUJII	Original	(40)			(45)					(45)			(60)				193
			Modified	(40)				(30)			(45)	(45)			(60)				193
2	Deputy Chief Advisor/NRW Reduction Management	Mitsuhito OMORI	Original			(75)							(75)						195
			Modified			(60)		(30)			(30)			(60)		(45)			195
3	Leakage Detection	Hiroki NIIMURA	Original				(55)				(70)								220
			Modified	(60)							(110)				(60)				220
4	Water Treatment System	Tomohiro SHIMIZU	Original																155
			Modified		(30)			(30)			(55)				(60)				155
5	Mechanical Equipment	Ryoji NAGAO	Original																105
			Modified	(45)			(60)				(30)	(59)			(45)				105
6	Electrical Equipment	Dr. Sayed Osman Madbouly	Original																90
			Modified	(20)				(10) (20)			(20)					(20)			90
7	Hydraulic Analysis for Network	Kenji YAMADA	Original																90
			Modified								(60)		(80)			(30)			90
8	Distribution Network(1)	Masahiro TAKEUCHI	Original																38
			Modified			(38)							(38)						38
9	Distribution Network(2)	Kiyoshi KIYAMA	Original																120
			Modified		(30)			(30)			(30)				(60)				120
10	Well Monitoring	Nobuyuki IIJIMA	Original																45
			Modified									(45)	(45)						45
11	Water Quality	Kazuhiro UMEKI	Original				(45)						(30)						75
			Modified		(30)									(45)					75
12	Coordinator / Assistant for NRW Reduction Management	Atsushi KATO	Original									(40)	(40)						70
			Modified									(40)				(30)			70

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Attachment-3 (1) **Phase-2: Annual Plan of Operation (General Activity) Ver.2**

Items		2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
Output0:	**The project is managed and coordinated properly**														
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee														
0-3.	Organize the Joint Coordinating Committee (JCC) meeting at least once a year														
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC														
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM														
Output1:	**Human Resource Development through coordination among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened**														
1-2.	Conduct Training of Trainers (TOT) for developing SOP	for SHAPWASCO													
1-2-1.	OJT for training	OJT through SOP assessment													
1-3.	Conduct TOT for NRW reduction	for SHAPWASCO													
1-3-1.	OJT for training	OJT through training practice													
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops														
1-4-1.	Seminars / workshops to be conducted by SHAPWASCO	Original			SOP				SOP	NRW SOP				SOP WDM	
		Amendment		SOP					NRW	SOP		SOP		SOP WDM	
1-4-2.	Training on water leakage survey and water leakage detection equipments at the training yard in Sharkiya Governorate	Original													
		Amendment													
1-4-3.	Open seminars	Original													
		Amendment													
1-5.	Collect information for public awareness promotion to prepare improvement plans of approaches and tools for publicity	Original													
		Amendment													
1-5-1.	Workshop to understand current situation deeply and to exchange experiences among SHAPWASCO, GHAPWASCO and MCWW	Original													
		Amendment													
1-5-2.	Presentation of examples on the approaches and tools in Japan	Original													
		Amendment													
1-5-3.	Preparation of improvement plan for activities to promote public awareness	Original													
		Amendment													
	<Equipment Plan>														
	Equipment Procurement (JICA Expert)	Original	Procurement			Transport	Delivery								
		Amendment	Procurement				Transport	Delivery							
	Equipment Procurement (JICA)	Original	Procurement (Water CAD)							Procurement (WDM)					
		Amendment	Procurement (Water CAD)											Procurement (WDM)	
	<Training in Japan>														
	WDM	Original													
		Amendment													

A4-7

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Attachment-3 (2) **Phase-2: Annual Plan of Operation (Development of SOP) Ver.2**

Items		2012											2013		
		Phase-2													
		2	3	4	5	6	7	8	9	10	11	12	1	2	3
Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates															
Action-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates														
Action-2	Select 3 model facilities in Gharbia and Minufia Governorates each														
Action-3	Organize SOP teams														
Action-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate														
4-1	Assessment of the effectiveness of SOPs in Sharkiya Governorate	Original													
		Amendment													
4-2	Extraction of the problematic point	Original													
		Amendment													
Action-5	Revise SOPs of Sharkiya Governorate, if necessary														
5-1	Revision of SOPs of Sharkiya Governorate														
Action-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO														
6-1	Examination for the site condition (C/P organization control, Cooperative framework of trainer etc.)														
6-2	Preparation of basic system drawings (P&ID, Single line diagram)														
6-3	Preparation of draft SOPs for O&M with site training	Original													
		Amendment													
6-4	Preparation of unified forms of O&M records and reports														
6-5	Examination of water quality management	Original													
		Amendment													
6-6	Preparation of draft SOPs for water quality management	Original													
		Amendment													
Action-7	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance														
7-1	Applying of SOP on On-the-Job Training														
Action-8	Monitor the progress of SOP activities														
8-1	Monitoring of activity condition on On-the-Job Training	Original													
		Amendment													

A4-8

S.B

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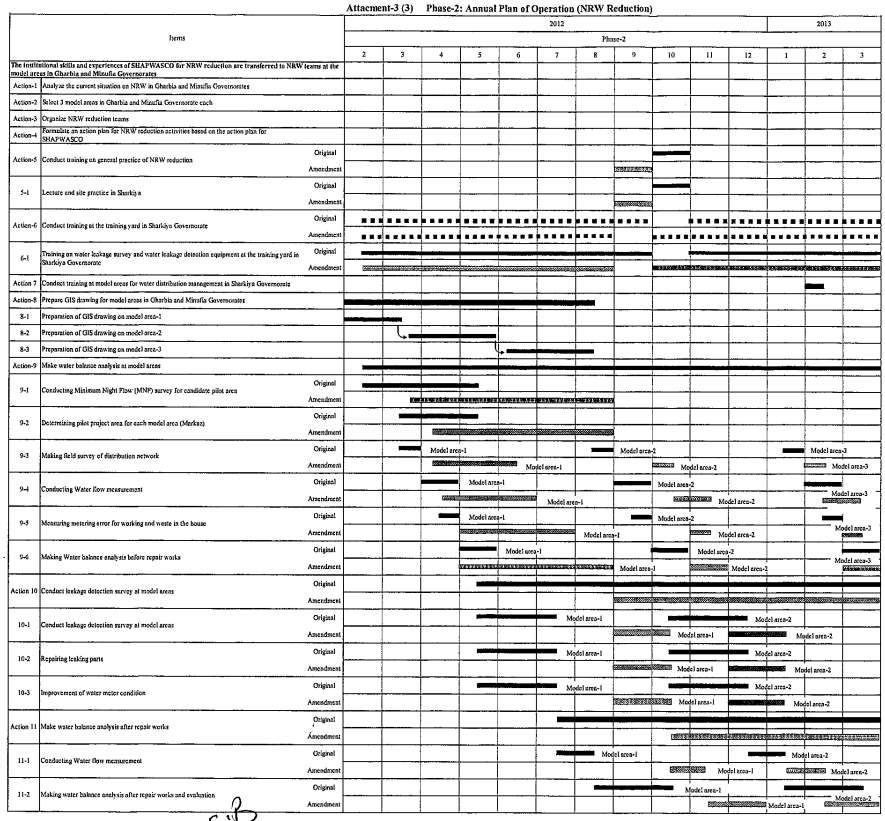
E.E Ayman

Attachment-3 (3) Phase-2: Annual Plan of Operation (NRW Reduction)



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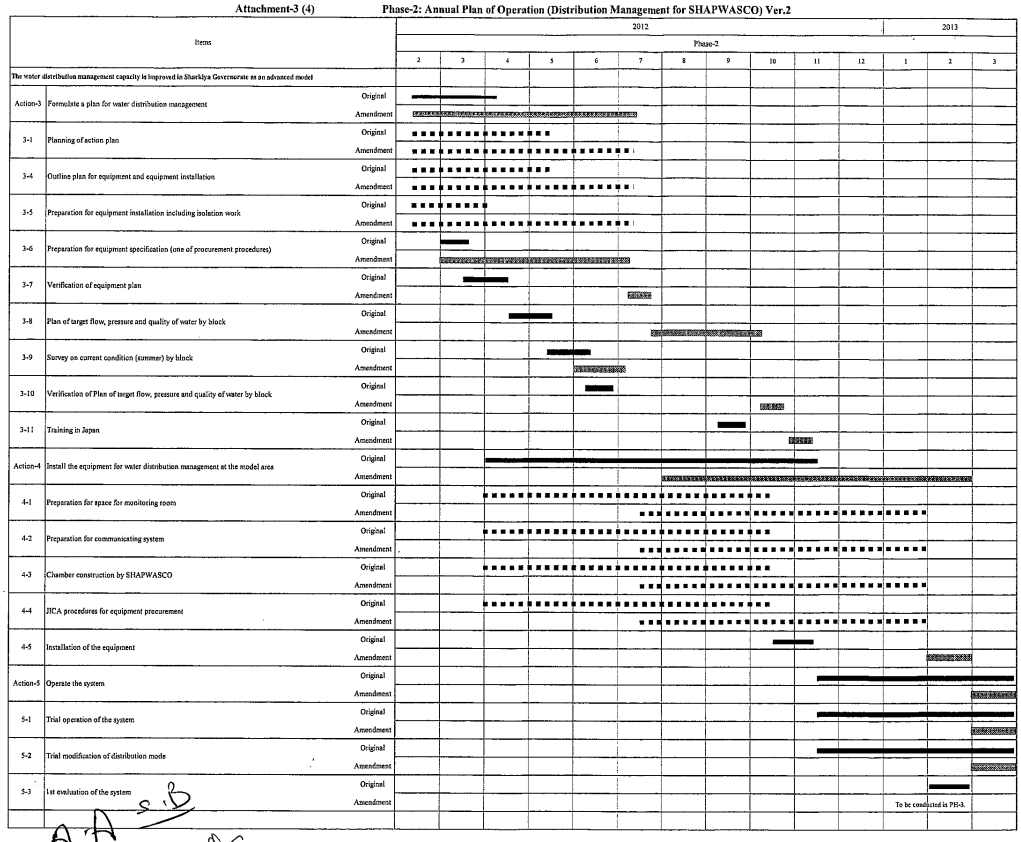
Attachment-3 (4) Phase-2: Annual Plan of Operation (Distribution Management for SHAPWASCO) Ver.2



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The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 5th Steering Committee held on the 8th of November 2012 at HCWW

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 5th steering committee on the 8th of November 2012. Contents described in the following pages were confirmed in the committee.

S. Bayoumi

Dr. Salah Bayoumi
Project Manager
Head of Project Sector
Holding Company for Water and Wastewater (HCWW)

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

Ahmed Abdeen

Mr. Ahmed Abdeen
Project Co-Manager
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Ayman abdel Kader

Mr. Ayman Abd El Kader
Project Co-Manager
Chairman
Gharbia Potable Water and Sanitation Company (GHAPWASCO)

E. E.

Mr. Ezzat El Sayad
Project Co-Manager
Chairman
Minufia Company for Water and Wastewater (MCWW)

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1. Date, Time, Place and Participants of the Committee

Date: the 8th of November 2012
Time: 10:00 – 13:30
Place: HCWW
Participants: As shown in Attachment-1

2. Progress until the end of October 2012

JET reported the following and the participants confirmed the current progress of the Project:

(1) SOP

Draft SOP was prepared to cover principal devices for SWTPs and Fe/Mn facilities. At the facilities, operation data were commenced to be recorded according to the draft SOP. In November, the Project team will start preparation of SOP for wells. On-the-job-training for proper operation are going to start at site. For SHAPWASCO, SOP for emergency generator was formulated as an improvement activity of SOP. In general, the progress is well according to APO revised in July 2012.

MCWW requested to change the model facility for well, because the model well of MCWW is going to be closed. Therefore, MCWW is planning to replace the model well with a substitute. MCWW has three candidates as the substitute. The participants confirmed that MCWW will select the substitute with Mr. Iijima in the middle of November 2012. The substitute should be approved by the next JCC.

(2) NRW

The 1st round of water balance survey (before leak repair, meter calibration, etc.) was conducted for GHAPWASCO and MCWW at sites of the 3 model areas, including MNF. As for meter accuracy tests, GHAPWASCO and MCWW are conducted for 2 and 1 model areas respectively. Although the water balance analysis is under verification, GHAPWASCO has proceeded to leak detection survey as well as survey for illegal connections. Leak detection survey is behind the schedule due to delay of water balance analysis. The Project team has difficulties to complete the water balance analysis because of the inaccuracy of customers' water meters.

(3) WDM

Detail plan formulation will be conducted in November – December 2012. For equipment, SHAPWASCO commenced preparation works (construction of chambers and monitoring room) in September. It is scheduled to be finished in February 2013. In parallel, JICA is undertaking procurement procedures for the equipment. According to JICA, the equipment delivery will be in the end of March or the beginning of April 2013.

(4) PO

Since some activities are behind the schedule, PO should be revised in the next JCC.

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3. Report of trip to Jordan

In the period between 14 and 18 October, 2012, the following key members visited Water Authority of Jordan to have high rank exchange of opinions as well as observation of practices in Jordan.

- ✓ Dr. Salah Bayoumi, Head of Project Sector, HCWW
- ✓ Mr. Shaker Abdelfattah, Head of Project Sector, SHAPWASCO
- ✓ Mr. Adel Attia, Head of O&M Sector
- ✓ Mr. Ayman Bassuni, Head of O&M Sector
- ✓ Mr. Katsumi Fujii, Chief Advisor, JICA expert team
- ✓ Mr. Nagi Gaber, Facilitator, JICA expert team

They observed mainly the followings:

(1) Plumber license system as well as training system.
(2) Pilot project to reduce distribution pressure, aiming at reduction of NRW.
(3) Meter workshops.
(4) Zai treatment plant.

4. Schedule and Discussion Points of Mid-term review

JICA will conduct the mid-term review for the project, aiming at confirming progress, achievement and necessity of project modification. JICA selected Mr. Iwase, a private consultant, for evaluation. Intended key schedule is as shown below.

(1) 10 November: Arrival of Mr. Iwase.
(2) 18 November: Arrival of JICA officials (Mr. Omura and Mr. Hamano).
(3) 25 November: Open seminar and JCC.
(4) 27 November: Departure of the review team.

The participants confirmed the following:

- ✓ Dr. Salah Bayoumi, Head of Project Sector, HCWW, is assigned by JICA to be the Egyptian Evaluator.
- ✓ To secure convenience for participation of Chairman of HCWW, JCC should be held in HCWW on 26 November 2012.
- ✓ For the detail of seminar should be discussed by HCWW and JET as well as place and date. (It was discussed on 11 November 2012. The seminar should be held in Tanta on 22 November 2012.)

5. Difficulties on Water Balance Survey for NRW

JET reported that the inaccuracy of customers' water meters is too large to have accurate NRW ratios. Due to difficulties of the NRW analysis, the Project team is not able to enter into leak detection completely. The participants confirmed the following:

- ✓ The purpose of the Project is to reduce NRW. It is not to have the accurate NRW. However, HCWW

Abdeen 3 E.E. S.B

Ayman

and the 3ACs want to have the NRW as accurate as possible.

- ✓ Budget is not enough to replace all meters.
- ✓ GHAPWASCO and MCWW will confirm immediately the accuracy of all meters in the pilot areas. And they will clean / repair the meters.
- ✓ After then, the Project team will re-commence the all activities starting from water balance survey.
- ✓ Since the certain period is necessary to clean / repair the meters, the Project team concentrate on leak detection surveys. It will be conducted before the water balance survey.
- ✓ GHAPWASCO and MCWW should form special team for meters check / clean / repair, separately from leak detection team.

6. PIs for the current condition and target to be improved by the Project

JET proposed PIs to be applied for the Project evaluation as follows:

(1) SOP

- ✓ Energy cost per cubic meter of water produced (LE/m^3)
- ✓ Amount of alum / chlorine / Potassium Permengnate used per one cubic meter of water produced (g/m^3)
- ✓ Ratio of effective utilization of raw water (%): "Production volume of plant" / "Intake volume of plant" (%)

(2) NRW

- ✓ NRW ratio (%): "NRW in m^3" / "System input volume in m^3 (distributed volume)"
- ✓ Reduction rate of NRW (%): "Reduction volume of NRW in m^3" / "NRW in m^3 before improvement"

(3) WDM

- ✓ Number of complaints per 1000 connections on water suspension and low pressure.
- ✓ Ratio of inappropriate pressure of water distribution (%): ("Number of points for inappropriate pressure" x "Number of days for inappropriate pressure") / ("Number of points for continuous monitoring" x 365days)

(4) Discussion and Confirmation

The following are confirmed through discussion:

- ✓ The participants agreed that PIs for SOP and NRW are good for the Project.
- ✓ Number of complaints is not scientific. Further consideration is necessary.
- ✓ Further consideration is necessary for WDM on possibility to apply some economic values.
- ✓ HCWW and JET will have further discussions together with a General Manager for PIs in HCWW.

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Attachiment-1

List of Participants

[Egyptian side]	
Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ahmed Abdeen	Chairman of SHAPWASCO
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Ezzat El Sayad	Chairman of MCWW
Mr. Ahmed Saeed	Project Sector of HCWW
Mr. Alaa El Din Taleb	SHAPWASCO
Mr. Abdel Shafee	SHAPWASCO
Mr. Saeed Attia	SHAPWASCO
Mr. Ahmed Elsayed Rabie	GHAPWASCO
Mr. Ahmed El Maleh	GHAPWASCO
Mr. Ayman Bassyouny Abdeen	MCWW
Mr. Bilal Galal Khalaf	MCWW
[Japanese side]	
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Hiroki Niimura	Leakage Detection
Mr. Ryoji Nagao	Mechanical Equipment
Mr. Atsushi Kato	Coordinator／Assistant for NRW Reduction Management
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Mohamed Abdel Kader Abouzekry	Facilitator of the Project team
Mr. Mohammed Abd El-Kader Abd El-Ghany	Facilitator of the Project team
Mr. Mahmoud Khalf	Local expert

S.B Abdeen

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添付4-22

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 6th Steering Committee held on the 20th of June 2013 at HCWW

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 6th steering committee on the 20th of June 2013. Contents described in the following pages were confirmed in the committee.

S. Bayoumi

Dr. Salah Bayoumi
Project Manager
Head of Project Sector
Holding Company for Water and Wastewater (HCWW)

Mr. Katsumi Fujii
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area,
Japan International Cooperation Agency (JICA)

Ahmed Abdeen

Mr. Ahmed Abdeen
Project Co-Manager
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Ayman abdel Kader

Mr. Ayman Abd El Kader
Project Co-Manager
Chairman
Gharbia Potable Water and Sanitation Company (GHAPWASCO)

Mr. Ezzat El Sayad
Project Co-Manager
Chairman
Minufia Company for Water and Wastewater (MCWW)

1. Date, Time, Place and Participants of the Committee

Date: the 20th of June 2013

Time: 10:00 – 12:00

Place: HCWW

Participants: As shown in Attachment-1

2. Discussion and Confirmation

JET reported the progresses and planes as Attachment-2 and 3. The contents are basically agreed by the participants. The following are special and/or additional discussion results.

(1) SOP

- For the cases of drain recirculation activity (MCWW), HCWW requested MCWW to analyze drain water quality periodically, especially for aluminum. MCWW agreed on the request.
- SOPs for the additional model facilities should be also finished within the Project period. HCWW requested accordingly to prepare more detailed schedule for the expansion activities to finish the SOPs for the additional model facilities. GHAPWASCO and MCWW should manage the activities and progresses according to the detail schedule.

(2) NRW

- For Zefta, HCWW requested GHAPWASCO to try again another cycle of NRW reduction and water balance surveys to re-check the NRW ratio. GHAPWASCO agreed to do so.

(3) Terminal Evaluation and Seminars

- The participants confirmed that the terminal evaluation will be in November 2013.
- For the occasion of the terminal evaluation, JET will organize the open seminar.
- JET propose that HCWW organize another seminar in February 2014 for the ending seminar. It is also proposed to invite other Ministries (irrigation and water resources for example). HCWW agreed on the proposal.

(end)

Attachiment-1

List of Participants

[Egyptian side]

Dr. Salah Bayoumi	Head of Project Sector of HCWW
Mr. Ayman Abd El Kader	Chairman of GHAPWASCO
Mr. Mohamed Badr	Project Sector of HCWW
Mr. Alaa El Din Taleb	SHAPWASCO
Mr. Ahmed Mahel	SHAPWASCO
Mr. Ahmed Elsayed Rabie	GHAPWASCO
Mr. Ahmed El Maleh	GHAPWASCO
Mr. Omar Salah	GHAPWASCO
Mr. Mohamed Masoud	GHAPWASCO
Mr. Ayman Bassyouny Abdeen	MCWW
Mr. Bilal Galal Khalaf	MCWW

[Japanese side]

Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Mitsuhito Omori	Deputy Chief Advisor / NRW reduction
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Mohamed Abdel Kader Abouzekry	Facilitator of the Project team
Mr. Mohammed Abd El-Kader Abd El-Ghany	Facilitator of the Project team

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Discussion Papers for the 6th Steering Committee (20 June 2013)

1. Progress and issues until the end of May 2013.

1-1 SOP

The following activities are now undertaken.

(1) GHAPWASCO

a) El Melahia WTP

- Improvement of the settlement efficiency in sedimentation tanks (Improvement of Alum consumption and effective utilization ratio)
- Improvement of filtration efficiency in sand filters (Effective utilization ratio)
- Review of chlorine dosing amount (Improvement of chlorine consumption)

b) Mahalet Marhoom IMRP

- Improvement of Effective Utilization Ratio

(2) MCWW

a) El Sadat WTP

- Activation of Drain Recirculation System

b) Gezy IMRP

- Activation of Drain Recirculation System

(3) Expansion to other facilities

GHAPWASCO

a) Samanod WTP

- Site survey is completed.
- P&ID (under progress).
- Preparation of rehabilitation work.

b) Kasr Baghdad IMRP

- Site survey is completed.
- P&ID (under progress).

MCWW

a) Shebeen El Kom Gadeeda SWTP

- As-Built Drawing is managed as P&ID.
- Rehabilitation work, which includes the calibration of instrumentation devices, is completed.
- Draft SOPs were read through C/Ps.

- Revised daily/monthly reporting formats have been provided.

b) Kafr El Batanon IMRP

- As-Built Drawing is managed as P&ID.
- Rehabilitation work, which includes the calibration of instrumentation devices, is completed.
- Improvement activity of water treatment efficiency will be applied soon, along with the provision of draft SOPs and daily/monthly reporting formats.

c) Other Facility

- Expansion work in Tala SWTP and Toukh Tanbesha IMRP will be started later.

1-2 NRW

(1) Result of reduction rate for the model areas

Following table is a result of NRW reduction rate for the model areas.

	NRW ratio (before)	Target reduction rate	Target NRW ratio	NRW ratio (after)	Actual reduction rate	Number of leakage repair	Notes
GHAPWASCO							
Tanta	40.1%	30.0%	28.0%	24.7%	38.4%	4	
El Mahala El Kobra	27.1%	25.0%	20.3%	22.0%	18.8%	2	
Zefta	21.2%	25.0%	15.9%	21.0%	0.9%	1	Leak was small at valve
MCWW							
Shebeen	19.6%	25.0%	14.7%	16.5%	16.0%	1	
Quesna	29.8%	25.0%	22.3%	22.5%	24.5%	3	
Barket El Sab'a	27.1%	25.0%	20.3%	20.2%	25.6%	4	

(2) Expansion activity to other Markaz

GHAPWASCO

a) The headquarters selected staff-members for leak survey at each branch office and provided acoustic rods to them. Training for branch staffs has been conducted by C/P of the headquarters. Branch staffs have been continuing leak survey and several branches have been activated for leak detection survey by control of the headquarters.

b) JET and C/P team has discussed future plan/expansion plan to other Markaz. The team will make draft plan in July through workshop with all branches.

MCWW

a) C/P and current NRW department has cooperated their activities each other.

b) The headquarters selected staff-members for leak survey at each branch office and provided acoustic rods to them. Training for branch staffs has been conducted by C/P of the headquarters and NRW department.

c) Branch staffs will prepare action plan for leakage survey and discuss it with C/P and NRW department.

d) In parallel, JET and C/P team has discussed future plan/expansion plan to other Markaz. The team will make draft plan in July.

(3) Expansion activity to other Governorates

GHAPWASCO has contacted several governorates and shared information of NRW reduction activities. JET recommends that HCWW support extension activities to other governorates.

1-3 WDM

(1) Equipment Procured by JICA

The planned equipment has been delivered to Zagazig in the end of April 2013. SHAPWASCO started the installation thereafter. However, some defects are found on the equipment as described in Clause-5. The equipment has not yet commenced for service. The equipment is installed at the planned sites except the following:

- 1 telemeter for Well-8, which is defective one.
- 1 data indicator (whose shape is same as telemeter) for WTP pressure.

(2) Equipment / Facilities / Undertakings of SHAPWASCO

Through SHAPWASCO efforts, the works are approaching the completion.

No.	Item	Situation
1	Cable connection for the exiting flow meters and reservoir level meter.	Flow meters for old plant are connected. 2 flow meters and 1 level meter are not connected. It is expected to be finished soon.
2	Monitoring Room	Although under construction, a room for JICA equipment is finished in enough level for equipment installation.
3	Analogue pressure gauges for 17 well stations	Finished.
4	Contract with a telephone company	Finished.
5	Electric power feeders	20 of 24 sites are finished. The remaining is expected to be finished soon.

(3) Data Collecting Activities

Data acquisition has been started for well pressures. JET is now waiting for the 1st report for confirmation. Since outlet pressure and raw/treated water flows are connected to the central monitoring system for old plant of WTP, the 3 data are now automatically acquired.

2. Equipment to be procured by JET

JICA decided to procure 4 additional leak detectors for GHAPWASCO and MCWW. They have been already delivered to Cairo. HCWW is now undertaking the custom clearance. They are expected to be arrived at HCWW on 26-June 2013. Thereafter, 2 sets are allocated to each of GHAPWASCO and MCWW.

3. APO and Major Activities to be conducted for Phase-3

3-1 APO

JET proposes the APO for Phase-3 as attached.

3-2 Terminal Evaluation

JICA is planning to have the terminal evaluation in November 2013. Similar process will be taken as the mid-term review.

3-3 Open seminars

For the occasion of the terminal evaluation, JET proposes an open seminar to be held in November 2013. Additionally, JET requests HCWW to organize another open seminar (ending seminar) by its initiatives. It is expected for the ending seminar to invite wider participants from different organizations such as Ministry of Irrigation and Water Resources.

4. Target of PIs to be authorized

4-1 Data acquired until the end of May 2013

(1) GHAPWASCO

a) El Melahia SWTP

Provisional Target of PIs in El Melahia SWTP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Liquid Aluminum Sulfate (g/m^3)	
Target Setting	90.0	8.00	35.00	0.35

Improvement in El Melahia SWTP

Month	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Liquid Aluminum Sulfate (g/m^3)	
Dec 2012	85.0	8.87	38.45	0.39
Jan 2013	85.3	8.11	39.47	0.38
Feb 2013	84.1	8.19	38.14	0.40

Mar 2013	82.7	9.09	37.00	0.39
Apr 2013	80.6	8.76	42.56	0.37
May 2013	83.2	8.53	39.08	0.38

b) Mahalet Marhoom IMRP

Provisional Target of PIs in Mahalet Marhoom IMRP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Calcium Hypochlorite (g/m^3)	Potassium Permanganate (g/m^3)	
Target Setting	85.0	6.00	2.00	0.60

Improvement in Mahalet Marhoom IMRP

Month	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Calcium Hypochlorite (g/m^3)	Potassium Permanganate (g/m^3)	
Dec 2012	N/A	7.05	3.04	0.76
Jan 2013	N/A	6.59	2.38	0.66
Feb 2013	N/A	7.42	2.12	0.60
Mar 2013	86.7	4.29	2.15	0.68
Apr 2013	89.8	5.63	2.05	0.64
May 2013	94.3	4.92	1.79	0.54

Note) Data for effective utilization ratio is reference value due to the inaccuracy of flow meter reading.

(2) MCWW

a) El Sadat SWTP

Provisional Target of PIs in El Sadat SWTP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Aluminum Sulfate (g/m^3)	
Target Setting	92.0	6.50	18.0	0.36

Improvement in El Sadat SWTP

Month	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Aluminum Sulfate (g/m^3)	
Sep 2012	88.0	9.20	26.0	0.45
Oct 2012	90.0	8.50	24.0	0.42
Nov 2012	90.0	7.50	22.0	042
Dec 2012	88.6	6.56	22.6	0.36
Feb 2013	90.41	6.41	20.0	0.41
Mar 2013	92.46	6.02	16.0	0.41
Apr 2013	91.2	6.00	18.0	0.39
May 2013	91.0	6.20	18.0	0.38

Note) Due to the inaccuracy of flow meter and suspension of water treatment system, it was impossible to obtain the data in January 2013.

b) Gezy IMRP

Provisional Target of PIs in Gezy IMRP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Potassium Permanganate (g/m^3)	
Target Setting	92.0	6.00	1.0	0.50

Improvement in Gezy IMRP

Month	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Potassium Permanganate (g/m^3)	
Sep 2012	84.0	3.50	2.0	0.80
Oct 2012	84.8	4.03	1.61	0.81
Nov 2012	86.3	6.40	1.07	0.80
Dec 2012	88.5	6.00	0.91	0.80
Jan 2013	91.2	6.30	1.09	0.76
Feb 2013	91.5	6.80	1.17	0.797
Mar 2013	91.6	6.80	1.08	0.80
Apr 2013	91.0	7.00	1.10	0.81
May 2013	91.0	6.50	0.96	0.79

4-2 Recommendation for target values of PIs

For Mahalet Marhoom IMRP of GHAPWASCO, the data collection has been undertaken for both inlet and outlet water flows since the beginning of March 2013. According to the data, the target is recommended to be modified.

Recommended Target for Effective Utilization Ratio in Mahalet MArhoom IMRP

Effective Utilization Ratio	
Before examination	After examination
85 %	96 %

In Gezy IMRP of MCWW, it will be hard to achieve a balance between potassium permanganate and chlorine consumption for the provisional target. JET and C/P team recommend the modification of chlorine target from 6.0 to 6.5 g/m^3. Even if modifying the target, annual cost reduction is expected for LE13,400 / year.

Recommended Target for Chlorine Consumption in Gezy IMRP

Unit consumption of Chlorine	
Before examination	After examination
6 g/m^3	6.5 g/m^3

Accordingly, the target PIs are proposed as follows;

Target of PIs in El Melahia SWTP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Liquid Aluminum Sulfate (g/m^3)	
Target Setting	90.0	8.00	35.00	0.35

Target of PIs in Mahalet Marhoom IMRP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Calcium Hypochlorite (g/m^3)	Potassium Permanganate (g/m^3)	
Target Setting	**96.0**	6.00	2.00	0.60

Target of PIs in El Sadat SWTP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Liquid Aluminum Sulfate (g/m^3)	
Target Setting	92.0	6.50	18.0	0.36

Target of PIs in Gezy IMRP

	Effective utilization Ratio of Water (%)	Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Gaseous Chlorine (g/m^3)	Potassium Permanganate (g/m^3)	
Target Setting	92.0	**6.50**	1.0	0.50

5. Repairs of Equipment and Modifications of Software settings

5-1 Defects

Following defects are found on the delivered equipment. Details are under discussion among HCWW, SHAPWASCO, JET and equipment provider (Yokogawa).

No.	Equipment	Condition	Yokogawa Plan
1.	Telemeter (In-door type)	Name Plate for W-8 is written as "W-7". Necessary to correct for "W-8".	The new plate was prepared. It will be fixed at site. It will be done with repair of item 2.
2.	Telemeter (In-door type)	One of the 17 units is not good for assembly. Necessary for re-assembling.	Repairing materials are prepared. It is now under preparation for export. It is expected the beginning of July for arrival at Cairo. Repair will be done in Zagazig, expected in the middle of July.
3.	Telemeter (Both type for In-door and Out-door) in general	Even if recovered from black-out, communication between RTU and communication module is not recovered automatically.	Program to be installed in RTU is prepared. It is expected to start the work in the end of June. The work will be in Zagazig.
4.	Central Monitoring System	When the negative direction of flow is detected, "error" is indicated.	Modification on the soft setting will be finished in the beginning of July. Delivery and re-installation will be in the middle of July.
5.	Central Monitoring System	Summary sheet for A4 area on total flows (in-coming, out-going, well production) is not prepared to be indicated / printed-out.	Same as item 4.

Further troubles are found in June 2013, which are suspected to be defects on the software setting (including database connection). Yokogawa Egypt inspected the suspicious points on 19-Jun. Yokogawa is now studying the points for confirmation. Plan of solutions will be presented later.

5-2 Request of SHAPWASCO for further training

WDM team became possible for usual monitoring operation through the initial training provided by Yokogawa (financed by JICA). However, modification of software setting is not easy and not included in the training. According to Yokogawa Egypt, special trainings are necessary for around 2 weeks in Cairo, to modify settings of screen, database, reports, etc. SHAPWASCO requests JET to provide such trainings for future expansions and modifications of monitoring system. JET started discussion with JICA for the matter.

5-3 JET Recommendation

It is common to have a support contact between users and equipment providers for monitoring system. JET recommends strongly SHAPWASCO to have a contract with Yokogawa Egypt for periodical maintenance of system and Q&A for usage.

Attachment-3 Phase-3: Annual Plan of Operation (General Activity)

	Items	2013									2014		
		Phase-3											
		4	5	6	7	8	9	10	11	12	1	2	3
Output0:	**The project is managed and coordinated properly**												
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee												
0-3.	Organize the Joint Coordinating Committee (JCC) meeting at least once a year												
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC												
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM												
Output1:	**Human Resource Development through coordination among water supply companies in Sharkiya, Gharbia and Minufia Governorates is strengthened**												
1-2.	Conduct Training of Trainers (TOT) for developing SOP	for GHAPWASCO, MCWW											
1-2-1.	OJT for training	OJT through SOP activity											
1-2-2.	Seminar for Presentation Skills												
1-3.	Conduct TOT for NRW reduction	for GHAPWASCO, MCWW											
1-3-1.	OJT for training	OJT through NRW activity											
1-3-2.	Seminar for Presentation Skills												
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops												
1-4-1.	Seminars / workshops to be conducted by SHAPWASCO			SOP					NRW SOP	WDM		NRW SOP	
1-4-2.	Training on water leakage survey and water leakage detection equipments at the training yard in Sharkiya Governorate												
1-4-3.	Open seminars												
	<Equipment Plan>												
	Equipment Procurement (JICA Expert)		Procurement (NRW)	Transport Delivery									
	Equipment Procurement (JICA)	Delivery (WDM)											
	<Training in Japan>												

Attachment-3 Phase-3: Annual Plan of Operation (Development of SOP)

	Items	2013									2014		
		Phase-3											
		4	5	6	7	8	9	10	11	12	1	2	3
Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates													
Action-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates												
Action-2	Select 3 model facilities in Gharbia and Minufia Governorates each												
Action-3	Organize SOP teams												
Action-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate												
Action-5	Revise SOPs of Sharkiya Governorate, if necessary												
Action-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO												
6-1	Examination for the site condition (C/P organization control, Cooperative framework of trainer etc.)												
6-2	Preparation of basic system drawings (P&ID, Single line diagram)												
6-3	Preparation of draft SOPs for O&M with site training												
6-4	Preparation of unified forms of O&M records and reports												
6-5	Examination of water quality management												
6-6	Finalization of SOPs												
Action-7	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance												
7-1	Applying SOP for On-the-Job Training												
Action-8	Monitor the progress of SOP activities												
8-1	Monitoring of activity condition on On-the-Job Training												
Action-9	Draft the policy/plan for disseminating SOP to the other Marakazes												
9-1	SOP Expansion to new model facilities for GHAPWASCO and MCWW												
9-2	Compiling of long-term SOP activity target												
9-3	Preparation of the draft policy/plan of SOP activity for whole governorate												

Attachment-3 Phase-3: Annual Plan of Operation (NRW Reduction)

Items		2013									2014		
		Phase-3											
		4	5	6	7	8	9	10	11	12	1	2	3
The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates													
Action-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates												
Action-2	Select 3 model areas in Gharbia and Minufia Governorate each												
Action-3	Organize NRW reduction teams												
Action-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO												
Action-5	Conduct training on general practice of NRW reduction												
Action-6	Conduct training at the training yard in Sharkiya Governorate												
6-1	Training on water leakage survey and water leakage detection equipment at the training yard in Sharkiya Governorate												
Action 7	Conduct training at model areas for water distribution management in Sharkiya Governorate												
Action-8	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates												
Action-9	Make water balance analysis at model areas												
9-1	Conducting Minimum Night Flow (MNF) survey for candidate pilot area												
9-2	Determining pilot project area for each model area (Markaz)												
9-3	Making field survey of distribution network												
9-4	Conducting Water flow measurement												
9-5	Measuring metering error for working and waste in the house												
9-6	Making Water balance analysis before repair works												
Action 10	Conduct leakage detection survey at model areas												
10-1	Conduct leakage detection survey at model areas												
10-2	Repairing leaking parts												
10-3	Improvement of water meter condition												
Action 11	Make water balance analysis after repair works												
11-1	Conducting Water flow measurement												
11-2	Making water balance analysis after repair works and evaluation												
Action 12	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes												
12-1	Leak Detection Activity in other Markaz												
12-2	Making draft policy/plan for dissemnating NRW reduction activity to other Markaz												
12-3	NRW reduction activity in other Markaz on draft policy/plan												

Attachment-3 Phase-3: Annual Plan of Operation (Distribution Management for SHAPWASCO)

Items		2013									2014		
		Phase-3											
		4	5	6	7	8	9	10	11	12	1	2	3
The water distribution management capacity is improved in Sharkiya Governorate as an advanced model													
Action-4	Install the equipment for water distribution management at the model area												
4-1	Preparation for space for monitoring room												
4-2	Preparation for communicating system												
4-3	Chamber construction by SHAPWASCO												
4-4	JICA procedures for equipment procurement												
4-5	Installation of the equipment												
Action-5	Operate the system												
5-1	Well operation												
5-1-1	Recording Outlet Pressure at 1hour interval												
5-1-2	Trial Operation according to the Outlet Pressure												
5-1-3	Identification of Appropriate Pressure for Switch On/OFF												
5-2	Flow / Pressure Monitoring through Telemetry												
5-2-1	Baseline Data Collection under usual Operation												
5-2-2	Monitoring Flow/Pressure while Trial Operation of WTP and wells												
5-3	Operation of Distribution Pump in WTP according to data												
5-4	Data Analysis												
5-4-1	Input Operation Data of Wells												
5-4-2	Integration of Data for Production and Distribution												
5-4-3	Demand Fluctuation												
5-4-4	Low Service Pressure												
5-4-5	Number of Complaints												
5-4-6	Proposal for Improvement Plan for Water Supply System												
Action-6	Develop SOP for water distribution management												
Action-7	Evaluate the operation and SOP for water distribution management												
7-1	Efficiency and Effectiveness Evaluation												
7-2	Interview Survey												

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta

Minutes of Meeting for the 7th Steering Committee held on the 31st of August 2014 at HCWW

Holding Company for Water and Wastewater (HCWW), Sharkiya Potable Water and Sanitation Company (SHAPWASCO), Gharbia Potable Water and Sanitation Company (GHAPWASCO), Minufia Company for Water and Wastewater (MCWW) and JICA expert team (JET) hold the 7th steering committee on the 31st of August 2014. Contents described in the following pages were confirmed in the committee.

S. Bayoumi

Dr. Salah Bayoumi	Mr. Katsumi Fujii
Project Manager	Chief Advisor
Vice Chairman	The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area, Japan International Cooperation Agency (JICA)
Holding Company for Water and Wastewater (HCWW)	

Mr. Ayman Abd El Kader	Mr. Mahmoud Zaki	Mr. Mohamed Naguib
Project Co-Manager	Project Co-Manager	Project Co-Manager
Chairman	Chairman	Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)	Gharbia Potable Water and Sanitation Company (GHAPWASCO)	Minufia Company for Water and Wastewater (MCWW)

1. Date, Time, Place and Participants of the Committee

Date: the 31st of August 2014

Time: 10:00 – 12:00

Place: HCWW

Participants: As shown in Attachment-1

2. Schedule and PO-4

The participants confirmed the following:

(1) The Project's activities for SOP and NRW in GHAPWASCO and MCWW will be finished in this end of August 2014. Both ACs will continue the expansion works of SOP and NRW in their Governorates by self-efforts.

(2) MCWW has started the discussions with Qualubia Company for Water and Wastewater for assistance on SOP development.

(3) Period of WDM activities for SHAPWASCO will be extended until April 2015.

(4) PO is modified and approved as shown in Attachment-2.

3. Trainers for SOP and NRW

The Project team proposed the following persons for trainers of SOP and NRW. The participants approved the proposed persons as trainers in the 3 ACs.

(1) Trainers for SOP in SHAPWASCO

Name	Remark
Abd El Shafi Abd El Aziz Mohamed	Engineer
Gamal Abd El Hameed	Engineer
El Sayed Mostafa	Chemist
Ahmed Saeed Abd El Halim	Engineer

(2) Trainers for NRW in SHAPWASCO

Name	Remark
Alaa El Din Mohamed	Management
Saeed Mohamed Attia	Engineer
Walaa Mohamed Ali	Engineer
Tamer Wael Abd Elhady	Technician

(3) Trainers for SOP in GHAPWASCO

Name	Remark
Gad Abdel Monsef	Engineer
Mohamed Masood	Engineer
Mekawy Mekawy	Chemist
Mahmoud Badr	Engineer (Electrician)
Ahmad El Maleh	Engineer
Rizk El Fiky	Engineer

(4) Trainers for NRW in GHAPWASCO

Name	Remark
Ahmed Rabee	Engineer
Omar Mohamed Salah El Din	Engineer
Salah Mohamed El Sawahly	Technician

(5) Trainers for SOP in MCWW

Name	Remark
Ayman Bassyouni Abdeen	Engineer
Saeed Abdelfattah	Engineer
Mohamed Fathy Gaber	Engineer
Mohamed Fawzy Awad	Engineer
Khaled Kazamel	Engineer
Adel Ibraheem	Chemist

(6) Trainers for NRW in MCWW

Name	Remark
Mohamed Mostafa Shafey	Engineer
Mohamed Fawzy Bader	Engineer
Ahmed Mohamed El Showny	Engineer

4. Ratio of Low Service Pressure (PI for WDM)

The Project team presented the calculated data for ratios of low service pressure as shown in the next table.

Ratio of Low Service Pressure

Item	Mar. 2014	Apr. 2014	May 2014	Jun 2014	July 2014
Whole Zagazig					
Total effective hours for data at 9 points	2,887	3,407	2,749	3,465	4,883
Hours below 1.0bar at 9 points	240	201	253	512	964
Ratio below 1.0bar	8%	6%	9%	15%	20%
A-4					
Total effective hours for data at 2 points	854	848	644	803	1,149
Hours below 1.0bar at 2 points	12	8	1	6	34
Ratio below 1.0bar	1.4%	0.9%	0.2%	0.7%	3.0%

The participants discuss the following:

- The low service pressure ratio would be influenced by the water demand.
- It would be possible to be varied by month.
- It is difficult to say that the ratio of March is the representative of current pressure condition for general.

Since it is not possible to compare the monthly data with ones of next year in the Project, the Project team proposes the target as shown in the next table.

Target Ratio of Low Service Pressure

Area	Initial Ratio in March	Target Ratio in March
Whole Zagazig	8%	7%
A-4	1.4%	1.3%

5. Other Discussion

(1) WDM

HCWW instructed the following for WDM:

- WDM is not a monitoring activity.
- Modifications of operation modes for WTP / wells and capacity improvement such as well constructions are included.
- According to such activities, SHAPWASCO should improve the water distribution conditions.

SHAPWASCO will continue the activities for operation modes modifications and examination for necessity of new wells.

(2) NRW

HCWW is impressed by the following for leak detection results. HCWW encouraged GHAPWASCO and MCWW to continue / expand NRW activities.

Result of Leak Detection in GHAPWASCO

Branch name	Number of surveyor	Surveyed house connections	Leaked numbers							Surveyed days	Leak amount (m^3/day)
			Total	House connection			Main pipe				
				Steel	PVC	Others	Steel	PVC	Others		
Zefta	2	4,100	18	7	8	0	1	2	0	60	103.7
Santa	4	3,581	33	13	13	0	0	7	0	55	522.7
Bassyoun	2	3,100	14	3	9	0	1	1	0	45	355.64
Kotor	2	3,462	16	2	12	0	0	2	0	60	141.1
Kafr El Zayat	2	5,180	53	3	42	0	0	8	0	45	508.32
Samanoud	2	2,900	44	5	12	2	3	4	18	40	550.08
Total	14	22,323	178								2,181.54

Result of Leak Detection in MCWW

Branch name	Number of surveyor	Surveyed house connections	Leaked numbers			Surveyed days	Leak amount (m3/day)
			Total	House connection	Main pipe		
Tala	2	4,000	1	1	0	40	13.7
El Shohada	2	800	14	14	0	8	191.5
Berket El Sab'a	2	3,200	18	18	0	32	326.9
Quesna	2	2,400	11	11	0	24	150.5
Shebeen	2	2,400	18	18	0	24	246.2
Ashmoon	2	1,600	1	1	0	16	13.7
El Bagoor	2	3,200	7	0	0	32	95.8
Menouf	2	1,600	1	0	0	16	13.7
Total	16	19,200	71	71	0		1,051.9

(end)

Attachiment-1

List of Participants

[Egyptian side]	
Dr. Salah Bayoumi	Vice Chairman of HCWW
Mr. Ayman Abd El Kader	Chairman of SHAPWASCO
Mr. Mahmoud Zaki	Chairman of GHAPWASCO
Mr. Mohamed Naguib	Chairman of MCWW
Mr. Alaa El Din Taleb	SHAPWASCO
Mr. Mostafa Ibrahim	SHAPWASCO
Mr. Tamer Kamel Hussein	SHAPWASCO
Mr. Adel Attia	GHAPWASCO
Mr. Omar Salah	GHAPWASCO
Mr. Rizk El Fiky	GHAPWASCO
Mr. Mohamed El Shafey	MCWW
Mr. Mohamed Fawzy Awad	MCWW
[Japanese side]	
Mr. Katsumi Fujii	Chief Advisor / Water supply planning
Mr. Atsushi Kato	Coordinator / Assistant for NRW Reduction Management
Mr. Mohamed Nagi Gaber	Facilitator of the Project team
Mr. Mohammed Abd El-Kader Abd El-Ghany	Facilitator of the Project team
Mr. Mahmoud Abdelkader	Local Expert
Mr. Ahmed Atef	Interpreter
Mr. Amr Salah Abd-elaal	Interpreter

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Attachment-2

31 August 2014

Plan of Operation (PO-4)

Items		Year1				Year2				Year3				Year4				Year5				Person in Charge	Major Input		Remarks
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		Japan	Egypt	
1. Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened																									
1-1.	Conduct management training for the top management			☆																		HC, SH, G,M	☆ Training in Japan		
1-2.	Conduct Training of Trainers (TOT) for developing SOP			☆																		SH, G,M	JICA Experts Local Exerts ☆ Training in Japan		Year 1:for SH Year 4:for G, M
1-3.	Conduct TOT for NRW reduction			☆																		SH, G,M	JICA Experts Local Experts ☆ Training in Japan		
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops																					HC, SH, G,M	JICA Experts		
2. Based on the experiences of SHAPWASCO, SOPs are development and utilized at the model facilities in Gharbia and Minufia Governorates																									
2-1.	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates																					G,M	JICA Experts	SH	
2-2.	Select 3 model facilities in Gharbia and Minufia Governorates each																					G,M	JICA Experts	SH	
2-3.	Organize SOP teams																					G,M	JICA Experts	SH	
2-4.	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate																					G,M	JICA Experts	SH	
2-5.	Revise SOPs of Sharkiya Governorate, if necessary																					G,M	JICA Experts	SH	
2-6.	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO																					G,M	JICA Experts	SH	
2-7.	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance																					G,M	JICA Experts	SH	
2-8.	Monitor the progress of SOP activities																					G,M	JICA Experts	SH	
2-9.	Draft the policy/plan for disseminating SOP to the other Marakazes																					G,M	JICA Experts	SH	
3. The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates																									
3-1.	Analyze the current situation on NRW in Gharbia and Minufia Governorates																					G,M	JICA Experts	SH	
3-2.	Select 3 model areas in Gharbia and Minufia Governorates each																					G,M	JICA Experts	SH	
3-3.	Organize NRW reduction teams																					G,M	JICA Experts	SH	
3-4.	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO																					G,M	JICA Experts	SH	
3-5.	Conduct training on general practice of NRW reduction																					G,M	JICA Experts	SH	
3-6.	Conduct training at the training yard in Sharkiya Governorate																					G,M	JICA Experts ☆ Training in Japan	SH	
3-7.	Conduct training at model areas for water distribution management in Sharkiya Governorate																					G,M	JICA Experts	SH	
3-8.	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates																					G,M	JICA Experts	SH	
3-9.	Make water balance analysis at model areas																					G,M	JICA Experts	SH	
3-10.	Conduct leakage detection survey at model areas																					G,M	JICA Experts	SH	
3-11.	Make water balance analysis after repair works																					G,M	JICA Experts	SH	
3-12.	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes																					G,M	JICA Experts	SH	
4. The water distribution management capacity is improved in Sharkiya governorate as an advanced model																									
4-1.	Discuss methods and conduct survey for water distribution management																					SH	JICA Experts		
4-2.	Conduct training for water distribution management							☆														SH	JICA Experts ☆ Training in Japan		
4-3.	Formulate a plan for water distribution management																					SH	JICA Experts		
4-4.	Install the equipment for water distribution management at the model area																					SH	JICA Experts		
4-5.	Operate the system																					SH	JICA Experts		
4-6.	Develop SOP for water distribution management																					SH	JICA Experts		
4-7.	Evaluate the operation and SOP for water distribution management																					SH	JICA Experts		
0. The project is managed and coordinated properly																									
0-1.	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW																					HC, SH, G, M	JICA Experts		
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee																					HC, SH, G, M	JICA Experts		
0-3.	Organize the Joint Coordination Committee (JCC) meeting at least once a year																					HC, SH, G, M	JICA Experts		
0-4.	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC																					HC, SH, G, M	JICA Experts		
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC																					HC, SH, G, M	JICA Experts		
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM																					HC, SH, G, M	JICA Experts		● Mid-Term Review ▲ Terminal Evaluation

添付資料-5:　プロジェクトチーム会議議事録

(1)　GHAPWASCO

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 1st Project Team Meeting in GHAPWASCO for PH-1

Date	26th June (Saturday) 2011	Signature
Time	9:30～11:00	
Place	Tanta expert office	
Attendants	**[GHAPWASCO : C/P]**	
	Mr. Abd Alah El Laithy : Leader of C/P team	
	Mr. Basyouny Essa : Head of SOP team	
	Mr. Ahmed El Sayed Rabie : Head of NRW team	
	Mr. Moataz Hassan : SOP C/P team	
	Mr. Abd El Monaem AboYazeed : SOP C/P team	
	Mr. Ahmed Abd El Maaboud : SOP C/P team	
	Mr. Ahmed Atef : NRW C/P team	
	Mr. Amr Salah : NRW C/P team	
	Mr. Ahmed El Bakary : NRW C/P team	
	[JICA Expert Team]	
	Mr. Mitsuhito Omori : NRW Reduction	
	Mr. Ryoji Nagao : Mechanical Equipment	
	Mr. Nobuyuki Iijima : Well Monitoring	
	Dr. Ahmed El-Baz : SOP Senior Engineer	
	Mr. NAGI Gaber : Facilitator	
	Mr. Mohamed Abouzekry : Facilitator	
	Mr. Ahmed Ragab : Interpreter	
	Mr. Ahmed Atef : Interpreter	

1. General

Expert team reported general topics.

1-1. Purpose of PTM

Project information such as progress, issues, and schedule should be shared among expert team and counterpart team.

1-2. Schedule of Japanese Expert

The team reported the schedule of Japanese experts as follows;

- Mr. Katsumi Fujii : Departure on 23rd June 2011
- Mr. Nobuyuki Iijima : Arrival on 21st June 2011
- Mr. Kiyoshi Kiyama : Arrival on 28th June 2011
- Mr. Mitsuhito Omori : Departure on 1st July 2011

2. SOP activity

C/P team for SOP reported the progress, issue, and next schedule of the Project.

2-1. Progress

(1) Primary selection of candidate facility as 'Long List' for site survey
(2) Mini-seminar on 8 June at GHAPWASCO, 9 June at MCWW
(3) Site survey progress

- The C/P explained that the candidates facilities have been selected and are as follow:
  a- Surface Water Treatment Plants are Eight.
  b- Iron and Manganese Removal Plants are twenty.
- The C/P explained that the progress of survey works is as follow:
  a- Survey for seven water treatment plants was completed.
  b- Survey for two iron and manganese removal facilities was completed.

2-2. Issue for the Project

- JICA expert team and counter part team confirmed the necessity that counter part team has to work full time in the project.

2-3. Schedule for until September

JICA expert team and counter part team confirmed the schedule until September.

- Site survey and report preparation (June & July, 2011)
- Comparison & assessment based on report to prepare "Short List" (July & Sep, 2011)
- Secondary selection of candidate facility as 'Short List' for detail assessment (Sep, 2011)

3. NRW reduction activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

(1) General information for NRW

- The counter part informed that the requested data has been submitted to JICA expert team.
- GIS data will be provided within few days.

(2) Mini-seminar on 18 June at GHAPWASCO, 19 June at MCWW
(3) Discussion about future study

3-2. Issue for the Project

- JICA expert team and counter part team confirmed the necessity that counter part team has to work full time in the project.

3-3. Schedule for until September

JICA expert team and counter part team confirmed the schedule until September.

- Review and Study for SHAPWASCO's Action Plan (June & July, 2011)
- Attending SHAPWASCO's seminar which will explain the selection criteria.(2 July at GHAPWASCO, 3 July at MCWW)
- Select model areas (July & August, 2011)
- Making GHAPWASCO's Action Plan (August, 2011)
- Analysis the general information for NRW by expert team and discussion with C/P team (July, August, September 2011)

(End of MM)

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Agenda for 2nd Project Team Meeting in GHAPWASCO for PH-1

Date	28th July (Thursday) 2011	Signature
Time	11:00 am	
Place	GHAPWASCO headquarters	
Attendants	**[GHAPWASCO : C/P]**	
	Mr. Abdullah El Laithy : Leader of C/P team	
	Mr. Abd El Monaem AboYazeed : SOP C/P team	
	Mr. Ahmed Abd El Maaboud : SOP C/P team(well monitoring)	
	Mr. Mahmoud Badr : SOP C/P team (electricity)	
	Mr. Amr Salah : NRW C/P team	
	Mr. Ayman Abdel Kader : Chairman of GHAPWASCO	
	[JICA Expert Team]	
	Mr. Nobuyuki Iijima : Well Monitoring	
	Dr. Ahmed El-Baz : SOP Senior Engineer	
	Mr. Mohamed Abouzekry : Facilitator	
	Mr. Ahmed Ragab : Interpreter	
	Mr. Ahmed Atef : Interpreter	
	Dr. Sayed Madbouly :Electrical senior Engineer	

1. General

Expert team reported general topics.

1-1. Purpose of PTM

Project information such as progress, issues, and schedule should be shared among expert team and counterpart team.

1-2. Schedule of Japanese Expert

The team reports the schedule of Japanese experts as follows;

- Mr. Nobuyuki Iijima : Departure on 3rd July 2011

2. SOP activity

Dr. Ahmed El Baz reported the progress, issues, and next schedule of the Project.

2-1. Progress

(1) Short list is prepared for both SWTP and IMRF with the help of JET.
(2) Site survey progress for all C/P teams in SOP to be reported.

- Dr. Ahmed El Baz explained that the candidates facilities have been selected and are as follow:
  a- Surface Water Treatment Plants are Eight.
  b- Iron and Manganese Removal Plants are twenty.
  c- A short list has been prepared containing 3 SWTP and 5 IMRF.
- Dr. Ahmed El Baz explained that the progress of survey works is as follow:
  a- Survey for 8 SWTP was completed; all was done in presence of JET expert.
  b- Survey for 18 IMRF was completed, 7 facilities were done by the C/P only.
- C/P for well monitoring discussed their progress, issues, and future plan.
- C/P team for electricity discussed their progress.

2-2. Issues for the Project

- **C/P issues:**

(1) The facilities that have been excluded made the survey time longer.
(2) The budget for operation and maintenance has to be gathered from economical analysis department.
(3) Some stations don't have a flow meter to measure the total of treated water capacity.
(4) All SWTP flow meters for raw water are not suitable for reading (broken or malfunctioning).
(5) The population number is approximate from the year 2006.
(6) There is no Fe/Mn analysis equipment in the IMRF for on spot analysis.
(7) Most SWTP doesn't have drawings for the facility except layouts.
(8) It is not available to have daily analysis for water quality on daily basis.
(9) The different methods for calculating the capacity in stations, which is solved by using the method informed by the JET.
(10) Some of the managers of IMRF has very weak grasp of their facilities.

- **JET issues:**

(1) The late arrival of SOP C/P team to office, which results in less time for site surveying.
(2) The absence of the C/P team leader, and some of the C/P team members.
(3) Mr. Abdel Monaem wants to leave the SOP team.
(4) The general information is provided very late and is inaccurate.
(5) Some of the facilities visited were not fully under management and operation of GHAPWASCO or has some rehabilitation and expansion, which was not informed to the JET, which resulted in ignoring these facilities.

- The Chairman promised to solve the issue regarding the shortage in SOP C/P team, and will assign more personnel as soon as possible.

2-3. Schedule for until September

JICA expert team and counter part team confirmed the schedule until September, and that is to have a meeting with all facilities managers of the short list, in this meeting the managers were provided data sheets to fill up, and the C/P team will follow up the progress with them.

3. NRW reduction activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

(1) General information for NRW

- The C/P team had meetings with all branches of the company in the 8 markazes starting from 1st of July, 2011.
- The C/P team discussed the criteria for the selection of pilot areas for NRW.
- The NRW C/P teams also stressed on the importance of having each branch gather all information, and also draw free hand maps and compare it to the GIS drawings.
- Some maps are ready and will be delivered to the JET during the PTM

3-2. Issue for the Project

No issues discussed in the C/P team report for the Agenda.

3-3. Schedule for until September

- The NRW team will continue following up and making sure that each branch deliver the information and update to the GIS department in GHAPWASCO, and will choose the pilot areas according to it.
  - The chairman promised to help push the branches in helping the C/P team for NRW, in order to achieve the required goal.

(End of MOM)

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 3rd Project Team Meeting in GHAPWASCO for PH-1

Date	4th October (Tuesday) 2011	Signature
Time	11:00～14:00	
Place	Tanta expert office	
Attendants	**[GHAPWASCO : C/P]**	
	Mr. Abd Alah El Laithy : Leader of C/P team	
	Mr. Ahmed Abd El Maaboud : Head of SOP C/P team	
	Mr. Nagi Yousry : SOP C/P team	
	Mr. Samy Megahed : SOP C/team	
	Mr. Rizk El Fiqy : SOP C/P team	
	Mr. Ahmed El Sayed Rabie : Head of NRW team	
	Mr. Amr Salah El Din : NRW C/P team	
	[JICA Expert Team]	
	Mr. Mitsuhito Omori : NRW Reduction Expert	
	Mr. Tomohiro SHIMIZU : SOP Expert	
	Mr. Hiroki NIIMURA : NRW Expert	
	Mr. Kenji YAMADA : Hydraulic analysis Expert	
	Dr. Sayed Madbouly : Electrical Expert	
	Mr. Mohamed Nagi : Facilitator	
	Dr. Mostafa Moawad : NRW senior Engineer	
	Mr. Mohamed Abouzekry : Facilitator	
	Mr. Ahmed Ragab : Interpreter	
	Mr. Ahmed Atef : Interpreter	

1. General

Expert team reported general topics.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Katsumi Fujii : Departure on 30th September 2011
- Mr. Tomohiro Shimizu : Arrival on 3rd October 2011
- Mr. Kazuhiro Umeki : Arrival on 8th October 2011

1-2. Weekly Meeting for NRW

Weekly meeting for NRW has been started since last week in order to share the progress more periodically.

1-3. Equipment

JET reported the situation of equipment as follows.

- Equipment from Japan will arrive at Cairo airport 4th of October (this noon time).
- HCWW will pass customs for equipment.
- Xerox will install the copy machine as soon as possible by request of JICA Egypt.
- JET has a plan to procure the generator in Egypt by end of October.

The team requested following.

- Store place for leak detection is needed.

1-4. Project office

JET has requested environment improvement for the Project such as office space, desk, cabinet, Monitor, telephone line, and so on. GHAPWSCO has tried to solve this problem and promised to provide by 20th of October.

1-5. Site Tour to SHAPWASCO

The team has a plan of site tour in SHAPWASCO. JET has arranged this activity with SHAPWASCO. Followings are tentative plan.

1) Date : October 10 (Mon)
2) Time: From 10:00
3) Location
   - ✓ Briefing : Headquarter
   - ✓ SOP: Moving to Zagagiz WTP
   - ✓ NRW: Moving to one pilot project site in Zagazig city and Hihiya training yard

2. SOP activity

C/P team for SOP reported the progress, issue, and next schedule of the Project.

2-1. Progress

- The SOP team has been changed and the new team is organized.
- Site survey was done for the candidate model facilities (3 SWTP and 5 IMRF).
- Data is being collected on weekly basis from the candidate model facilities.
- A visit was done to Tanta and Kafr El Zayat SWTPs, and flow readings were taken over a period of 24 hours for each station, also a visit to El Naharia IMRF.
- Studying the chemical and electrical consumptions and capacity of raw and treated water.
- A seminar has been done in Alexandria on the 27th of September, 2011, showing the progress done so far in and the future plan.
- A short list of electricity has been done for the candidate facilities of the SWTPs and IMRFs, all 3 SWTPs are similar to previous evaluation done, and only 3 from the IMRFs; Mahalet Marhoum, El Gaefareya, and Manial El Howaishat. Single line Diagrams for Tanta El Gedeeda and Mahalet Marhoum are already done and being revised now.

2-2. Issues for the Project

- All IMRFs have no flow meters installed in it for raw or treated water.
- SWTPs of Zefta have a raw water flow meter that's not working, and Kafr El Zayat doesn't have one at all for the raw water, but all has a flow meter for treated water.
- All IMRF facilities have no labs or Iron and Manganese measuring equipment, except for Kotour El Kadeema, which makes it hard to take daily readings.
- Some of the weekly reports gathered from the stations are not complete, and they were informed that they have to complete it, such as; Aluminum Sulphite dose, weight of chlorine Cylinders, pump numbers, meter readings, and the total amount of raw water and treated water capacity.
- Not all cables of electricity have known diameters, so in the single line diagram the diameters will be assumed according to calculations.

2-3. Next Schedule

- Continue visits for the candidate facilities
- Specifying the model facilities through study and analysis from the data collected.
- Single line diagrams will be done for Zefta SWTP and another IMRF according to grading of the facilities.

2-5. Discussion:

The Flow meters for the model SWTP will be supplied by the JET if not present or can't be fixed, and the model IMRF will be provided by the company. GHAPWASCO has a plan to install mechanical flow meter at all IMRF and budget is already allocated for half of all IMRF.

3. NRW reduction activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

- A meeting with the JET and C/P team for NRW in the company Headquarters, and mentioned what was accomplished during July and August.
- It was agreed on choosing 3 Markazes from the 8 markazes (Tanta, El Mahala El Kobra, and Zefta).
- GIS drawings for all branches have been prepared.
- Networks managers showed the candidate pilot areas in markazes (Tanta, El Mahala El Kobra, and Zefta).

1) Tanta:

- A meeting was held and maps have been revised for Tanta city.
- Chosen areas are: (Mohamed Farid - El Sayed El Mezayen – Botros).
- Mohamed Farid and Sayed El Mezayen areas have been isolated, and these areas are good

and the NRW reduction activities can be done on it, and Botros area will be isolated during the 2nd week of October.

- The JET and C/P team for NRW went many times to the areas to be isolated, but it wasn't ready, because of the many tasks required by Tanta staff already (Can not be controlled by the staff).

2) El Mahala El Kobra:

- A meeting was held with the JET, C/P team, and the staff of El Mahala El Kobra, in the JET office, and the GIS maps were revised and the areas were (Abdel Moneom Riyad - El Zahraa – El Nasr and El Salam – El Gabreya), and it was shown that some areas has weak pressure in the day time due to population increase.
- A meeting was held in the Japanese SWTP on 9th of October with the managers of facility and networks of El Mahala El Kobra, and it was confirmed that in case the pressure is low it will be hard to make NRW reduction activities. Therefore C/P member will try to solve this problem for carrying out NRW reduction activity.

3) Zefta:

- A meeting was held with Networks staff and GIS maps were revised and the following areas were chosen: (Behind Railway1 and 2 – El Gaish El Qebly and El Masraf – El Masry)
- The areas were isolated by site survey and the El Gaish El Qebly area showed high level of Ground Water will be removed, El Masry area was isolated and it's a good area for NRW reduction activities, Behind Railway 1 area was isolated and also good, and El Gaish El Qebly area will be replaced with Behind Railway 2.

3-2. Issue for the Project

- Adding a young engineer and technician to the NRW team.
- Giving a chance of training for network managers in SHAPWASCO.
- Speed of creating chambers.

3-3. Next Schedule

- Continue of isolation of areas in Tanta and Zefta.
- Trying to find a way to increase pressure in El Mahala El Kobra markaz.
- C/P team visiting SHAPWASCO to see the accomplishment done by them.
- Making a plan for constructing chambers by January
- Making a Seminar for managers of networks and facilities to show the progress done so far and the future plan, also explain what was seen in SHAPWASCO.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 4th Project Team Meeting in GHAPWASCO for PH-1

Date	29th October (Saturday) 2011	Signature
Time	11:00～14:00	
Place	Tanta expert office	
Attendants	**[GHAPWASCO : C/P]**	
	Mr. Ahmed Abd El Maaboud : Head of SOP C/P team	
	Mr. Nagi Yousry : SOP C/P team	
	Mr. Samy Megahed : SOP C/team	
	Mr. Rizk El Fiky : SOP C/P team	
	Mr. Mahmoud Badr : SOP C/P team (Electrical)	
	Mr. Mekawy Farag Mekawy : SOP C/P team (Water Quality)	
	Mr. Ahmed El Sayed Rabie : Head of NRW team	
	Mr. Omar Salah El Din : NRW C/P team	
	Mr. Ahmed El Bakary :NRW C/P team	
	[JICA Expert Team]	
	Mr. Mitsuhito Omori : NRW Reduction Expert	
	Mr. Tomohiro SHIMIZU : SOP Expert	
	Mr. Nagao : SOP Exoert	
	Mr. Umeki :SOP Expert	
	Mr. Hiroki NIIMURA : NRW Expert	
	Mr. Mohamed Nagi : Facilitator	
	Dr. Mostafa Moawad : NRW senior Engineer	
	Mr. Mohamed Abouzekry : Facilitator	
	Mr. Ahmed Ragab : Interpreter	
	Mr. Ahmed Atef : Interpreter	

1. General

Expert team reported general topics.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Mitsuhito Omori : Departure on 31th October 2011
- Mr. Hiroki Niimura : Departure on 7th November 2011
- Mr. Tomohiro Shimizu : Departure on 14th November 2011
- Mr. Nobuyuki Iijima : Arrival on 14th November 2011

1-2. Equipment

JET reported the situation of equipment as follows.

- Equipment from Japan arrived and did hand over from HCWW to GHAPWASCO.
- Xerox installed the copy machine; however, settings of scan etc. still are not finished. JET has requested to arrange to JICA Egypt.
- JET had a plan to procure the generator in Egypt by end of October; however it is difficult to find a suitable one in Tanta. JET continues to find it.

The team requested following.

- Store place for leak detection is needed.
- Equipment should be passed to the Project soon.
- JICA pick up shall be used for our Project.

1-3. Project office

JET has requested environment improvement for the Project such as office space, desk, cabinet, Monitor, telephone line, and so on.

1-4. Possibility of changing period of the Project

JET reported that JICA is planning the changing period of the Project as following.

Original period of Phase-1: Until end of March

Modified period of Pase-1: Until end of December

1-5. Discussion with Chairman

JET and C/P discussed with chairman and the chairman promised the following.

- Another project office and store room for equipment will be provided soon by decision of chairman.
- These rooms are temporary rooms and will be shifted within 3 months.
- 12 chambers for NRW reduction activity will be prepared by procedure which is decided by chairman, within 1 month.

2. SOP activity

C/P team for SOP reported the progress, issue, and next schedule of the Project.

2-1. Progress

- The SOP team has conducted detail survey of candidate facilities.
- The teams proposed Tanta El Gadeeda SWTP and Mahalet Marhoom Fe/Mn Removal Plant in Tanta Markaz as model facilities, Leaders of the Project of GHAPWASCO.
- Rehabilitation and/or calibration for existing equipment in model facility will be needed. The team will discuss the minimum requirement for rehabilitation and/or calibration and will propose the result of discussion to Leader of the Project.
- Activity of water quality has been started.

2-2. Next Schedule

- Choosing C/P teams inside the model facilities
- Surveying the stations for maintenance works and equipments requiring rehabilitation.
- Conducting rehabilitation for the stations and finishing it by February.

3. NRW reduction activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

- NRW training in SHAPWASCO was finished. Some C/P staffs from each branch joined this activity and learned about method of installation and practice for flow meter. And also C/P had experience of grand microphone.
- Action Plan for NRW reduction Activity was prepared by cooperation with JET. And work shop for this action plan was held on 26th of October. C/P from all branches and commercial section attended this work shop.

3-2. Issue for the Project

- It will be discussed with Chairman about method of making of chamber.
- 12 Chambers will be made by February.

3-3. Next Schedule

- GIS drawings should be prepared before minimum night flow survey on February.
- Exact location of flow meter chamber will be decided within this week.
- C/P and the chairman will decide the method of making chamber.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 5th Project Team Meeting in GHAPWASCO for PH-1

Date	6th December (Tuesday) 2011		Signature
Time	03:00 pm ~ 5:00 pm		
Place	Tanta expert office		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ahmed Abd El Maaboud	: Head of SOP C/P team	
	Mr. Samy Megahed	: SOP C/team	
	Mr. Rizk El Fiqy	: SOP C/P team	
	Mr. Omar Salah El Din	: NRW C/P team	
	[JICA Expert Team]		
	Mr. Umeki	:SOP Expert	
	Mr. Iijima	:SOP Expert	
	Mr. Mohamed Nagi	: Facilitator	
	Dr. Ahmed El Baz	:SOP senior Engineer	
	Mr. Mohamed Abouzekry	:Facilitator	
	Mr. Ahmed Ragab	:Interpreter	
	Mr. Ahmed Atef	:Interpreter	

1. General

Expert team reports general topics.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Mitsuhito Omori : Arrival on 12th December 2011
- Mr. Tomohiro Umeki : Arrival on 6th December 2011

1-2. Equipment

The situation of equipment as follows.

- Equipments are still in GHAPWASCO's warehouse, and will be transferred to JICA team office by 20th of December, 2011.
- JET plan to procure the generator in Egypt during December.

2. SOP activity

C/P team reports the following.

2-1. SOP (Operation and Maintenance)

2-1-1. Progress

- Many visits to Tanta WTP for revising the requirements of rehabilitation for SOP and they were divided according to a time schedule with agreement of Mr. Abdullah El Leity.
- Some progress had been done according to the rehabilitation schedule of Tanta WTP (installing pressure gauges and fixing some flow meters).
- A visit was done with Dr. Ahmed El Baz for some parts of the Tanta WTP, and some specifications of the equipment were set with the C/P team, and requirements of rehabilitation were handed to the company for tendering and procurement of the required items.
- Attended SOP workshop in GHAPWASCO, for the importance of P&ID, and how to select the C/P team in the stations.
- Mr. Abdel Shafi (SOP team leader for SHAPWASCO) joined for visits in Tanta WTP and Mahalet Marhoum IMRF, to be familiar with the model facilities for SOP activities.
- Finished the block flow diagram for both facilities and P&ID of Mahalet Marhoum IMRF.
- Finished choosing the C/P team in the model facilities.

2-1-2. Issues

- Until now there were no decisions made for the filters valves in Tanta WTP.
- The JICA pickup is not enough for the requirements of the project.

2-1-3. Future plan

- Drawing P&ID for Tanta WTP.
- Follow up with the rehabilitation of SOP for both facilities.
- Checking the valves of the filters in Tanta WTP.
- C/P team agreed to discuss the problem of transportation with the chairman.
- The C/P team will contact the company for the valves of the filters to check for the requirements.

2-2. WQM (Water Quality Management)

C/P team reports the following.

2-2-1. Progress

- A meeting was held with Mr. Umeki to explain the purpose of WQM and specified the activities as follows:
  a) SOP will be applied in the laboratory of the chosen model facility (Tanta WTP), and it will start during the second phase of the project.
  b) Exchange of information and experience between the 3 affiliated companies (SHPWASCO, GHAPWASCO, and MCWW) through workshops.
  c) Conducting site survey using the WQM questionnaire for customer complains.
- Attended WQM workshop in GHAPWASCO, presented by Dr. Sayed (manager of Zagazig WTP) and Dr. Hamdy (General manager of Central laboratory of GHAPWASCO)
- A program was done by Mr. Umeki, and handed to C/P team, and data entry is carried out by them.

2-2-2. Issues

- Attendance of public relations personnel.
- The JICA pickup is not enough for the requirements of the project.

2-2-3. Future plan

- Carrying out the site survey according to the schedule.

2-3. Well monitoring

C/P team reports the following.

2-3-1. Progress

- Contour maps of ground water for static water level and water quality are done based on the data collected from the 18 stations.
- 4 well facilities were chosen for SOP activity (Abou Dawoud,Kafr Sebtas, El Montaza, and El Kharasana) and Kafr Sebtas well facility was chosen as the model facility.
- 3 areas were chosen in Gharbia governorate, with 6 facilities in each area to choose the exact location for installing the water level meter.

2-3-2. Issues

There are no issues reported.

2-3-3. Future plan

- Choosing the exact facilities for installing the water level meters of well monitoring.
- Installing 2 flow meters in Kafr Sebtas (1 on the well and 1 on the outlet of the station)

3. NRW activity

C/P team reports the following.

3-1. Progress

- Choosing the areas for NRW activity and exact locations for the chambers.
- Tendering process papers for the construction of the 9 chambers have been prepared
- The NRW equipment have been checked and now in the stores of GHAPWASCO.

- The NRW head Mr. Ahmed Rabie travelled to Japan for the training.
- 2 offices are provided for the project, 1 of them will be store for equipment.

3-2. Issues

There is no issues reported

3-3. Future plan

- Completing the tendering process for the construction of chambers as soon as possible
- Preparing the GIS maps for the chosen areas and correcting the mistakes in the maps.
- Making shelves for the NRW equipment in the office room for storing.
- Making a box in the trunk of the JICA pickup for the equipment.
- Providing 1 Engineer and 1 Technician for the NRW C/P team.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 6th Project Team Meeting in GHAPWASCO for PH-2

Date	31st March (Saturday) 2012		Signature
Time	11:00～14:00		
Place	Chairman meeting room		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Samy Megahed	SOP C/team	
	Mr. Rizk El Fiqy	SOP C/P team	
	Mr. Nagy Youssry	SOP C/P team	
	Mrs. Hemat	SOP C/P team (CAD operator)	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Omar Salah El Din	NRW C/P team	
	Mr. Mohamed Massoud	NRW C/P team	
	Mr. Gad Abdel Monsef	NRW C/P team	
	Mr. Abdullah El Hawash	Public awareness manager	
	[JICA Expert Team]		
	Mr. Fujii	JET Leader	
	Mr. Omori	Deputy/ NRW Expert	
	Mr. Shimizu	SOP Expert	
	Mr. Umeki	SOP Expert	
	Mr. Mohamed Nagi	Facilitator	
	Dr. Ahmed El Baz	SOP senior Engineer	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Mohamed Abdel Kader	Facilitator	
	Mr. Ahmed Ragab	Interpreter	
	Mr. Ahmed Atef	Interpreter	

1. General

Opening words by Chairman and Mr. Fujii

2. SOP activity

C/P team reports the following.

2-1. Progress

- Rehabilitation work is divided into calibration work of instrumentations and installation work of equipment.
- Calibration Work: Vendor was decided to Zero One Company. The company will start working on 2nd of April 2012, and finish by 1st of May 2012.
- Installation Work: 1st tendering was unsuccessful. At present, tendering has been conducted dividing into several materials, and all works will be completed by 15th of May 2012.
- Preparation of P&ID: Site survey had been completed. P&ID drawing by AutoCAD is in progress, and it takes a month to finalize the drawing. (This activity can be continued in parallel with other activities.)
- Through the discussion with C/P and SOP members in model facility, we are preparing draft monthly and daily operation records for Tanta WTP.
- Customer claim survey for SOP is being carried out on weekly basis.

2-2. Issues

- Elder operators in Tanta WTP don't understand the purpose of the project. Thus, the continuous discussion for their awareness rising is required and the help from upper management is highly recommended too.
- There is lack in number of personnel working in Tanta WTP, and the chairman promised to resolve the problem, especially to complete the number of operators in the 2nd and 3rd shift.
- Some equipment is missing in Tanta WTP laboratory, and chairman agreed to provide us with help to complete the missing equipment.
- Requested nomination of 2 young engineers for the data management and data analyzing, chairman promised to add the 2 engineers as soon as possible.
- At a present, only 1 vehicle is allocated to the NRW and SOP activities for their transportation. Since increasing of site training work is expected from April, we would like to request allocation of additional car to C/P team.
- In order to measure the water capacity in Mahalet Mahoom IMRP, we would like to use portable ultrasonic flow meter owned by GHAPWASCO until the new flow meter procured by JICA is received, and the chairman agreed and said it was ready for use.
- Some problem with the batteries for Well monitoring was discussed, and Mr. Ahmed El Maleh said the problem will be solved as soon as possible.

2-3. Future plan

- Finishing rehabilitation work to start applying SOP in the model facilities.
- Finalizing the P&ID drawings for the model facilities.
- Making draft papers for SOP with reference to SHAPWASCO.

3. NRW activity

C/P team reports the following.

3-1. Progress

- Contractor finished construction of chambers in Zefta branch. Now contractor is working in El Mahala El Kobra and Tanta Markazes simultaneously.
- Received second grant from JICA equipment on 21st of February 2012.
- New members added to NRW C/P team, 2 engineers (Gad Abdel Monsef and Mohamed Massoud) and 1 technician (Salah Mohamed).
- Conducted trainings for installing and measuring of flow meters, once in Tanta WTP with SOP team, and second time in SHAPWASCO with MCWW NRW C/P.
- MNF activities started in 2 areas in Zefta (El Masry and El Masraf) on 19th and 21st respectively.
- Workshop for reading water meters (house meters) on 25th of March 2012.

3-2. Issues

- Establishment of a management within the structure of GHAPWASCO for NRW.
- Additional pickup truck for the project, due to conflict in activities with SOP.
- Incentives to the C/P teams for working after the standard working times of the company.
- Some troubles with chambers in Zahraa-2 and Mohamed Farid areas, something like electric cables, and now working on solving this problem.

3-3. Future plan

- MNF survey at total 9 candidate areas in 3 model areas will be done.
- 1 pilot area in 1 model area will be select.
- Measurement survey for flow and consumption in 1 pilot area will be done.
- Water balance analysis in 1 pilot area will be tried.
- Additional area will be done in Santa Markaz for MNF activities, this area will be done by C/P team on their own to apply what they learned through the project.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 7th Project Team Meeting in GHAPWASCO for PH-2

Date	6th May (Sunday) 2012		Signature
Time	11:00 ～13:30		
Place	Chairman meeting room		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Abdullah El Leithy	C/P team leader	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Samy Megahed	SOP C/team	
	Mr. Rizk El Fiqy	SOP C/P team	
	Mr. Nagy Youssry	SOP C/P team	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Omar Salah El Din	NRW C/P team	
	Mr. Mohamed Massoud	NRW C/P team	
	Mr. Gad Abdel Monsef	NRW C/P team	
	[JICA Expert Team]		
	Mr. Omori	Deputy/ NRW Expert	
	Mr. Mohamed Nagi	Project Facilitator	
	Dr. Mostafa Moawad	Senior NRW Engineer	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Ahmed Atef	Interpreter	

1. General

- Mr. Omori reported the situation about Japanese experts leaving Egypt during the Presidential election period according to JICA instructions.
- Mr. Omori reported about Africa Water Week.

2. SOP activity

C/P team reports the following.

2-1. Progress

- Rehabilitation work is divided into calibration work of instrumentations and installation work of equipment.
  - Calibration Work: The Contractor managed to finish field survey for Tanta WTP, Mahalet Marhoum IMRF, and Seberbay well facility. The contractor calculated the error percentage for all water flow meters in Mahalet Marhoum and Seberbay, and now working on Tanta WTP. The calibration work will start after finishing calculating the error for all the flow meters in all stations.
  - Installation Work: All contractors (5 contractors) were decided for the installation works, and no specific time was given yet to most the tenders. 1 portable flow meter was installed in Mahalet Marhoum IMRF before aeration tank to calculate amount of raw water, this flow meter is temporary until the flow meter provided by JICA is received.
- Preparation of P&ID: Site survey had been completed. Draft P&ID drawings are finished by AutoCAD, and after finishing the installation works the drawings will be modified according to the changes.
- Through the discussion with C/P and SOP members in model facility, draft monthly and daily operation records are finished, and currently operators are using these records to record the data. Situation of recording in Mahalet Marhoum is very good, but as for Tanta WTP, the situation is not good as operators are not writing down the readings in time.
- SOP workshop was done from 22nd to 24th of April for Water Quality Management and operation records for SOP, attended from MCWW and GHAPWASCO plant managers, operators, and chemists. The presenters were Dr. Sayed, manager of Zagazig WTP and Mr. Abdel Shafie manager of SOP department in SHAPWASCO.
- Customer claim survey for SOP is now stopped, and now the preparation for SOP of laboratory is in progress.
- Situation of well monitoring of water level is good now, and as for Seberbay station, Mr. Ahmed El Maleh will make site inspection with manager of Tanta branch stations to check availability and quantity of flow meters to be installed. Also Mr. Ahmed El Maleh promised to collect data required by Mr. Iijima during this week.

2-2. Issues

- Requested nomination of 2 young engineers for the data management and data analyzing, chairman said it is hard to add 2 new members in the current time, but he will try as soon as possible.
- At present, only 1 vehicle is allocated to the NRW and SOP activities for their transportation. Since increasing of site training work is expected, additional car to C/P team is required.

2-3. Future plan

- Finishing rehabilitation work to start applying SOP in the model facilities.
- Studying SOP documents for Operation and Management, Quality Control, and Laboratory.
- Follow up of operation records in model facilities.

3. NRW activity

C/P team reports the following.

3-1. Progress

- Contractor finished construction of total 8 chambers in 3 pilot Markazes (Tanta, Zefta, and El Mahala El Kobra).
- A pilot area in El Mahala El Kobra (El Zahraa 2) was changed due to electric cables with the water pipe (Mansheyet Omar Ibn Abdel Aziz)
- Completing MNF activities in candidate pilot areas as follows:
  1) Zefta branch : Ibrahim Khatab area
  2) Tanta branch : Seberbay area
  3) El Mahala El Kobra: Abou Deraa and El Zahraa areas
- Personnel from El Santa branch joined the training in Zefta for using flow meters and pressure logger, also showed them how to conduct MNF.
- El Masraf area was chosen in Zefta branch as the pilot area for NRW activity.
- Started conducting Water balance analysis in the pilot area of Zefta branch.
- El Masraf area was surveyed for collecting data by installing flow meter for 1 week (from 17 to 23 of April 2012) and reading house meters.

3-2. Issues

- Constructing a chamber in Sayed El Mezayen area in Tanta due to Electric cables.
- JICA pickup is not enough for both activities of SOP and NRW.
- Requesting incentives due to working late.

3-3. Future plan

- Survey El Masraf area to calculate the error in the water meters.
- Finishing the MNF activity in the missing candidate pilot areas.
- Following up with the water meters for candidate areas in Tanta and El Mahala El Kobra branch, and also making water balance analysis.
- Coordinating with the other 5 branches to join the activities in the chosen pilot Markazes.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 8th Project Team Meeting in GHAPWASCO for PH-2

Date	6th of November (Tuesday) 2012		Signature
Time	10:00 ～12:00		
Place	JET office		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Yasser El Shahawy	Head of training sector GHAPWASCO	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Mohamed Masoud	SOP C/team	
	Mr. Rizk El Fiqy	SOP C/P team	
	Mr. Moataz Hassan	Manager of Melahia WTP	
	Mr. Hussein Shahin	Manager of Mahalet Marhoum IMRF	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Omar Salah El Din	NRW C/P team	
	Mr. Salah El Sawahly	NRW C/P team	
	[JICA Expert Team]		
	Mr. Fujii	Chief Advisor / JET leader	
	Mr. Kato	JET Coordinator	
	Mr. Niimura	Leak Detection Expert	
	Mr. Nagao	SOP Expert	
	Mr. Mahmoud Abo Khalaf	Local SOP Expert	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Ahmed Rasmy	Interpreter	
	Mr. Ahmed Atef	Interpreter	

1. General

- Reported the schedule of Midterm Evaluation by Mr. Fujii.
- Reported the progress and importance of filling the Midterm evaluation form.
- Brief explanation of the PDM (Project Design Matrix) as requested by C/P team.

2. SOP activity

C/P team reports the following.

2-1. Progress

- Reported changing the model WTP from Tanta El Gedeeda WTP to El Melahia WTP.
- Reported the progress of rehabilitation in all model facilities so far, remaining only few items that doesn't affect the SOP activity, finished items are:

1. Providing computers to the model facilities for data record inputs.
2. Fixing Chlorine leakage problem in the chlorine dosing facility of Melahia WTP.
3. Backwash flow meter for Melahia WTP is installed, but still need some software modification.
4. Alum level meter for Melahia WTP is installed on the Alum solution tank.
5. Chlorine and Potassium Permanganate levels are installed in Mahalet Marhoum IMRF.
6. Pre and Post Chlorination flow meters for Mahalet Marhoum IMRF are installed.
7. Recording of Mahalet Marhoum IMRF is going well for Daily and Monthly records.
8. Flow meter provided by JICA is installed and working properly in Mahalet Marhoum IMRF.
9. Spare parts list is prepared for

- Drawings for model facility are done by C/P, and revised with Japanese experts.
- OJT started in Melahia WTP, most work is done on 2 Filters so far. Activity target is to reduce the amount of water used in backwash, also includes fixing the weirs on the trough, then modifying the sand levels between the 2 sides of the filter to manage good distribution of water.

2-2. Issues

- Slow progress in finishing all rehabilitation works and installing missing items for all model facilities. Missing items:

1. Chlorine leak detector sensors for Melahia station.
2. Air scouring flow meter for Melahia station.
3. Readjusting software for Backwash flow meter in Melahia station.
4. Installing pressure and compound gauges for raw and treated water pumps in Melahia station.
5. Fixing the Auma control valves for the filter number 13 in Melahia station.
6. 2 Chlorine pumps for pre and post chlorination in Mahalet Marhoum Station.
7. Problem in 3rd shift, since operators are not qualified to operate the facility treatment unit, causing direct pumping to network without treatment in the 3rd shift of Mahalet Marhoum station.

- Reading the electric meter for Melahia station is hard, due to hard access to the transformer room in the facility.

2-3. Future plan

- Finishing remaining rehabilitation work in the model facilities.
- Trying to take the Electric meter out of the transformer room in Melahia Station.
- Reducing amount of water used in the backwash process in Melahia station.
- Decrease the frequency of conducting backwash process on the filters in Melahia station.
- Check the condition of the pre and post Chlorination flow meters after installing the new Chlorine pumps in Mahalet Marhoum station.
- Conducting experiments on the Sand filters in Mahalet Marhoum station, idea is to reduce the amount of Potassium Permanganate used for activation of filters, and substitute with more Chlorine dosing, since the price of Chlorine is much cheaper than Potassium Permanganate.

3. NRW activity

C/P team and Mr. Niimura report the following.

3-1. Progress

- First run of water balance is finished in Zefta and El Mahala El Kobra 2 model areas.
- Leak detection surveys were done in the 2 model areas of El Mahala El Kobra and Zefta
- Conducted Meter accuracy test to check the error in house meters, found many over registrations.
- Connected flow meter and pressure gauge at some well facilities, and at end of network to these facilities, in order to check the actual amount of water produced instead of calculations. The main idea is to verify the PIs on correct bases using actual data rather than using calculations.

3-2. Issues

- It is hard to obtain a correct NRW value because inaccuracy in house meters.

3-3. Future plan

- Discuss the issue of inaccuracy of house meters in the Steering Committee.
- Trying to concentrate to Leak detection survey until middle of December before Mr. Niimura's departure.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 9th Project Team Meeting in GHAPWASCO for PH-2

Date	12th of December (Wednesday) 2012		Signature
Time	11:00 ～13:00		
Place	Head office of GHAPWASCO		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Adel Attia	Head of training sector GHAPWASCO	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Mohamed Masoud	SOP C/team	
	Mr. Rizk El Fiqy	SOP C/P team	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Omar Salah El Din	NRW C/P team	
	Mr. Salah El Sawahly	NRW C/P team	
	[JICA Expert Team]		
	Mr. Omori	Deputy Chief Advisor / NRW Expert	
	Mr. Kato	JET Coordinator	
	Mr. Niimura	Leak Detection Expert	
	Mr. Iijima	Well Monitoring Expert	
	Mr. Yamada	Hydraulic Analysis Expert	
	Mr. Umeki	Water Quality Management Expert	
	Mr. Mahmoud Abo Khalaf	Local SOP Expert	
	Mr. Nagi Gaber	Facilitator	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Ahmed Rasmy	Interpreter	
	Mr. Ahmed Atef	Interpreter	

1. General

Expert team reports general topics.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Tomohiro Umeki : Arrival on 5th December 2012
- Mr. Hiroki Niimura : Departure on 12th December 2012
- Mr. Atsushi Kato : Ditto
- Mr. Nobuyuki Iijima : Departure on 27th December 2012
- Next Assignment
  (Fujii, Niimura, Shimizu) : From middle of January until end of February
  (Kato) : From beginning of February until end of February

1-2. Hydraulic Analysis Activity

- Mr. Yamada will conduct hydraulic analysis study on Seberbay village.
- Mr. Omar and Mr. Mohamed Masoud will join to his activity to learn Water CAD and how to conduct a hydraulic analysis study.
  - ➢ 1 Person from the network of Seberbay Village will be assigned to support in modifying the GIS maps to the actual situation.

2. SOP activity

C/P team reported the following.

2-1. Progress

- Still working on improving filters in Melahia WTP, now trying to reduce the frequency and amount of water consumed in the backwash process.
  - ➢ Agreed to install a metal plate on the blind area of the filters, as an experiment to avoid accumulation of scum in these areas, and therefore decreasing the back wash time.
- Temporary installment of flow meters on intake and discharge of Melahia WTP. And as checked there is an error of 20% in raw water capacity and 7% in treated water capacity.
  - ➢ Modify the Alum and Chlorine dosing amount during operation according to the accurate results.
- .No current activities are held in Mahalet Marhoum IMRF, due to rehabilitation in the Green Sand Filters.
- Well monitoring activity is concentrating now on the SOP for Seberbay Well Water facility. Operation Records are currently used to monitor the current operation of the facility. And calibration was done for the discharge line flow meters. Also draft P&ID for the facility is done.
- Water Quality Management activity is commencing work, currently checking the operation records and drafts SOPs.

2-2. Issues

- The problems in Mahalet Marhoum facility, since operation of treatment unit stopped many times, making it hard to keep up the OJT for SOP work.
- Some rehabilitation items are still missing in Melahia WTP, such as air scouring flow meter.
- Some problems of operation in Melahia station, such as Chlorinator units for chlorine dosing.
- Seberbay well water facility has some problems, such as 1 mechanical flow meter not working and need to be fixed, the date of installing new horizontal well is not scheduled yet, and no specific operation instructions for chlorine dosing unit. Also the level gauge for the elevated tank is not working and need to be fixed.

2-3. Future plan

- Perform same works done to experiment filters for ideal operation on other filters in Melahia WTP.
- Create some schedule for filters operation and back wash in Melahia WTP.
- Install valves on the Alum pipe line next to the Alum tanks, to avoid in case of breakage or leakage to stop the whole system in Melahia WTP.
- Calibration of flow meters of Melahia WTP in order to obtain accurate results.
  - ➢ Install 1 flow meter at the end of the treatment unit, in order to calculate the amount of treated water, and then be able to obtain real values and calculate PIs for Mahalet Marhoum Facility.
  - ➢ Check the Static and Dynamic level of water in the wells of seberbay well facility.
- Commitment to operation records for analysis and obtaining better result in all model facilities.

3. NRW activity

C/P team reported the following.

3-1. Progress

- Finished the consumption survey and started the second round of water balance in El Masraf area in Zefta Markaz, this is done after calibration and cleaning of water meters.
- Acoustic rod detection survey finished in Mohamed Farid Area and Seberbey in Tanta Markaz.
- No activity in Mahala due to safety problem.
- Selected new area for leak detection activity in Kafr El Zayet and GIS map is ready.
- Finished the reading of flow and pressure in 6 well facilities in different areas of Gharbia governorate, this is to check the actual amount of water discharged in order to be able to get a better NRW ratio for the whole Governorate.
- A visit from Kalyoubeya company to check NRW activity in GHAPWASCO, the NRW team made some presentation to explain the activity from start of project.

3-2. Issues

- The team supposes that meter calibration and cleaning are needed taking long time, and some meters have difficulty for cleaning due to spare parts.
  - ➢ Malfunctioning house meters due to broken spare parts will be fixed, in case there is no

spare parts then the house meters should be changed, and in case it will not be changed, we are forced to work with the same method of calculating the meters error.

- The team recommends that other one or two staffs will support for Mr. Salah to conduct leakage survey at the site near the future. In case of no JET, it is not easy to conduct survey. These additional staffs can attend from the each branch, and it is desirable to keep joining not temporary attendance but rather every attendance for smooth activity.
- Trying to find a method to increase the pressure in El Mahala El Kobra pilot areas in order to continue the activity with leak detection easily.

3-3. Future plan

- First priority is to check the real situation on meter cleaning in Mahala. The team will start to study as soon as possible. And if the team will face some problem, the team will share information.
- Acoustic rod survey will be conducted at third area in Tanta and the team will decide pilot area. After this meter calibration work will be started.
- Leak detection survey will be started in Kafr El Zayet, this is focusing just leak survey.
- The team will decide one or two additional stuffs at branch office to join NRW activity. The team has a plan to invite these staffs to Kafr El Zayet for training after our survey.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 10th Project Team Meeting in GHAPWASCO for PH-2

Date	23rd of January (Wednesday) 2013		Signature
Time	10:00 ～12:00		
Place	JET office		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Adel Attia	Head of training sector GHAPWASCO	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Mohamed Masoud	SOP C/team	
	Mr. Rizk El Fiqy	SOP C/P team	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Omar Salah El Din	NRW C/P team	
	Mr. Hussein Shahin	Manager of IMRF	
	Mr. Raafat	Manager of Tanta branch	
	Mr. Ibrahim Abdel Malak	Manager of facilities in Tanta branch	
	[JICA Expert Team]		
	Mr. Fujii	JET Chief Advisor	
	Mr. Omori	Deputy Chief Advisor / NRW Expert	
	Mr. Shimizu	SOP Expert	
	Mr. Niimura	Leak Detection Expert	
	Mr. Yamada	Hydraulic Analysis Expert	
	Mr. Mahmoud AboKhalaf	Local SOP Expert	
	Mr. Nagi	Facilitator	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Ahmed Rasmy	Interpreter	
	Mr. Ahmed Atef	Interpreter	
	Mr. Amr Salah	Interpreter	

1. General

Requested by JET for GHAPWASCO to start making a schedule for expansion of the SOP and NRW activities to other model facilities and pilot areas, agreed by Chairman and C/P to provide this schedule by the 10th of February with specifications of dates and Chosen models.

2. SOP activity

C/P team reports the following.

2-1. Progress

2-1-1. Melahia WTP

- Modification of Chlorine Cylinders operation, in order to keep the flow less that 7 kg/hr, in order to avoid the freezing of feeding line, this can be done by increasing number of Cylinders. Also the recording for Chlorine consumption by weight balance and alternating between the 2 lines of Chlorine Cylinders is going well.
- Solved some problems in recording missing data by discussing with facility manager and staff of the facility in order to maintain good records for analysis.
- Continue the experiment of measuring turbidity every 2 minutes during backwash of filters to check on the time of backwash is good enough or not.
- Currently modifying the filters media for each Filter, this is done by checking of Sand level and weir and trough level for each. The facility made a schedule to finish all filters modification by the 25th of February.
- Checking the water quality (Turbidity and Residual Chlorine) of filters in operation every 1 hour for 48 hours. This experiment is to give indication on how much can the filter work with regard to both head and water quality in the filter, and thus obtain good water quality.
- The water balance (ratio between raw water and treated water) is now fixed after using 2 flow meters (provided by JICA) to check on the amount of water at inlet and outlet of the facility. The error percentage has been applied to old data from previous month, and gave good indication to the efficiency of the facility with respect to production.

2-1-2. Mahalet Marhoum IMRF

- Solved the problem in Sand filters media, since the nozzles allowed the green sand to pass to the high reservoir and network. The media is now replaced after fixing and replacing some nozzles.
- Fixed the problem of leakage in the output facility from the insertion electromagnetic flow meter sensor, and now operators know how to manage to remove and clean the sensor, which is a good start to make periodical maintenance and cleaning to the sensor to obtain good readings.
- Old Chlorine pumps are now replaced with new pumps, in addition to 2 extra spare pumps.
- 1 new horizontal pump is installed in the shelter under the high tank reservoir.
- Finalizing the papers to purchase of spare parts (such as plastic valves, joints, rolling bearings, etc.) and the flexible connection on the high tank reservoir, and the chamber to be installed on the output of the treatment unit.

2-1-3. Seberbay

- P&ID for the facility is finished, with AutoCAD drawing.
- The mechanical flow meter on the output of line 3 is fixed now.
- Maintenance of Well number 2 is finished, by replacing the pipe of the well due to corrosion and holes present in the pipe from direct dosing of Chlorine in the well on monthly bases.
- Modified the operation records and is now distributed on the operators and utilized by facility.

2-2. Issues

2-2-1. Melahia WTP

- Problem of access to electric power meters in Melahia WTP, which makes it hard to have an idea of daily power consumption, thus hard to apply SOP to reduce the amount of consumption. A solution has been suggested by JET to install 6 power meters before the main 6 electric panels (4 panels in the treated water pumps chamber and 2 panels in the raw water pumps shelter).
- The Chairman and C/P agreed to this solution, and promised to start working on purchasing he required meters with accumulative readings.
- Still missing the required tools for electric maintenance, this is very late (over 6 month delay).
- Chairman promised to accelerate this process, and assigned Mr. El Maleh to take action quickly and prepare the required documents.
- Delay of missing items, like valves for separation of the Alum solution tanks, the air scouring flow meter, and the maintenance of flash mixers and bridge for clarifiers.
- Chairman assigned plant manager to prepare documents to purchase and fix the required items to get the facility to work properly, and promised to accelerate the process.

2-2-2. Mahalet Marhoum IMRF

- Main issue is operation in 3rd shift, since they use direct discharge to Network without treatment, due to lack of experience, and this causes problem for proper operation, and might also cause quality problems for the water produced.
  - Manager of Tanta branch promised to support the facility by adding 1 extra young technician to the facility, this will make it easier to rotate staff of 1st and 2nd shift with the 3rd in order to achieve good water treatment 24 hours per day.

2-2-3. Seberbay

- Fixing the level meter for the elevated reservoir of the facility, this will be done simply by support of Tanta branch.

2-3. Future plan

- Continue applying SOP to all model facilities, and try to achieve satisfactory decrease to PIs.
- Finish the remaining rehabilitation of the missing items.

3. NRW activity

C/P team reports the following.

3-1. Progress

3-1-1. Tanta Branch

- Finished leak detection survey for house connections in Pilot areas of Tanta Markaz (Mohamed Farid, Seberbay, Borek).
- Calibration is done for some house meters in Mahomed Farid areas.
- Started first run of Water Blanace in Mohamed Farid area.

3-1-2. Zefta Branch

- An experiment was conducted in Masraf area to check the amount of leakage in the area, this is done by closing the house connections vavles and measuring the amount of water flowing inside the area.
- Finished the leak detection survey for house connections in Masry area, and a total of 6 leaage points were detected and fixed. Currently we are calculating the amount of water before and after the fixing using water balance calculations.
- Finished the leak detection survey for house connections in Ibrahim Khatab area, 2 leak points were detected and a flow meter was installed to check the amount of water capacity to the area before fixing the leakage points.

3-1-3. General

- Training was conducted for leak detection survey in training yard of Hehia in SHAPWASCO, trainees were technicians from most Markaz of GHAPWASCO.
- A pilot Leak detection area was chosen in Kafr El Zayat Markaz, and training was done to staff of network on how to use the leak detection equipment.

3-3. Future plan

- Finishing the water balance Calculations for all remaining areas.
- Leak detection completion in Pilot areas.
- Distributing 20 Acoustic rods on all Markazes of the Company.
- Making a dissemination plan for leak detection in house connections in all Markazes.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-3)

Minutes of Meeting for 11th Project Team Meeting in GHAPWASCO for PH-3

Date	1st of June (Saturday) 2013		Signature
Time	13:00 ～15:00		
Place	Chairman office at GHAPWASCO Headquarters		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Adel Attia	Head of training sector GHAPWASCO	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Mohamed Masoud	SOP C/P team member	
	[JICA Expert Team]		
	Mr. Fujii	Chief Advisor	
	Mr. Omori	Deputy Chief Advisor / NRW Expert	
	Mr. Shimizu	SOP Expert	
	Mr. Niimura	Leak Detection Expert	
	Mr. Nagi Gaber	Facilitator	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Ahmed Atef	Interpreter	

1. General

Expert team reported general topics.

1-1. Events in phase 3:

- The evaluation of the project will be done in November by JICA, an open Seminar will be held to show the progress and activities done so far.
- It is important to show JICA the efforts done for dissemination of the experience to other Markaz and ACs.
- JET will recommend to HCWW that big Seminar will be held in February to show the results of the project to other ACs, other donors, and other organizations related to water.

1-2. Steering Committee and JCC

JET will arrange steering committee and JCC with HCWW near the future in order to discuss annual plan of operation for phase-3 (APO3).

2. SOP activity

SOP team reported the following.

2-1. Progress

- Currently we are trying to reach the target PIs in each facility, most of the PIs are not reached yet, but there is some improvement in some PIs.
- General progress in Mahalet Marhoum is good.
- General progress in Melahia is behind schedule.

2-2. Issues

- Delay in progress of Melahia WTP because of lost time in rehabilitation of Flash mixers and scrappers in the Clarifiers, resulting in high turbidity going to filters, but currently it is fixed and ready for work, so we expect to achieve results eventually.
- The Actuator valves in the filters are still not calibrated yet to work correctly, resulting in exposing the sand to air and not creating the filtering film on top of the sand in filters

2-3. Future plan

- Fix the remaining problems and push the activity to reach targeted PIs.
- Add other model facilities to the SOP activity, Bassyoun WTP and another Sakr model facility in Samanoud (not decided yet).
- A suggestion for expansion activity is to choose a team in each Markaz to carry out SOP activity; a workshop will be done by the C/P to pass the knowledge of SOP activities.
- A general schedule for activity expansion will be done by C/P.

3. NRW activity

NRW team reported the following.

3-1. Progress

- Currently all on site activity in all model areas is finished, only remaining water balance analysis and expected to be finished by end of June.
- 20 Acoustic sticks have been distributed on all Markazes and an NRW team has been chosen.
- Training in all Markazes is finished except for Bassyoun and Samanoud Markazes.

3-2. Issues

- There are no issues.

3-3. Future plan

- Finish training of remaining Markazes for expansion to Gharbia Governorate.
- Workshop for future activity/plan of each Markaz in Gharbia Governorate

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-3)

Minutes of Meeting for 12th Project Team Meeting in GHAPWASCO for PH-3

Date	25th of November (Monday) 2013		Signature
Time	11:00 ～13:30		
Place	Chairman office at GHAPWASCO Headquarters		
Attendants	**[GHAPWASCO : C/P]**		
	Mr. Ayman Abd El Kader	Chairman of GHAPWASCO	
	Mr. Adel Attia	Head of C/P team	
	Mr. Ahmed Rabie	NRW C/P team leader	
	Mr. Ahmed El Maleh	SOP C/P team leader	
	Mr. Rizk El Feqy	SOP C/P team member	
	Mr. Omar Salah	NRW C/P team member	
	Mr. Gad	SOP C/P team member	
	[JICA Expert Team]		
	Mr. Omori	Deputy Chief Advisor / NRW Expert	
	Mr. Mohamed Abouzekry	Facilitator	
	Mr. Ahmed Atef	Interpreter	

1. General

Expert team reported general topics.

1-1. Arrivals:

Mr. Omori arrived on 16th of November, 2013 and will leave again on 28th of November, 2013.

2. SOP activity

SOP team reported the following.

2-1. Progress

- Currently working on main model facilities in parallel with new extension facilities.
- There are set target values PIs (Performance Indicators) for each facility in order to reach by improving the facility operation. PIs have been set on 3 main items:

a) Water balance **b) Chemical consumptions** **c) Electrical consumption**

- Facilities conditions is as follows:

1) Melahia WTP:

- The PIs targets for Chlorine and Alum have been reached and generally stable, as for the water balance and electric consumption we couldn't reach the target value yet.

2) Zefta WTP:

- Currently finalizing the drawings of facility such as P&ID and block flow diagram.
- Rehabilitation works in the facility has been done so far, and also flow meters are installed and working good.
- Finalizing the SOP records according to facility needs to start receiving data and setting PIs targets according to current condition.

3) Samanoud WTP:

- Basic Drawings for Samanoud WTP are done.
- Records have been passed to Facility staff and we have records for 4 months now.
- Currently we are working on setting the PIs for the facility.

4) Mahalet Marhoum IMRF:

- All targets for PIs in Mahalet Marhoum have been achieved, except the last 2 month there is a drop in the water balance values.

5) El Ramlia IMRF:

- Currently finalizing the SOP drawings for the facility.
- We need to modify the piping from the well to the treatment unit in order to ensure that the facility will work all the time with treatment.

6) Seberbay Well facility:

- Rehabilitation work for facility has been finished and flow meters and manometers were installed.
- Started gathering information and conducted experiment and hydraulic analysis.

7) Shobrabeel Well facility:

- Currently finalizing SOP drawings
- Rehabilitation work has been done in the facility.
- Currently recording is being done in the facility.

2-2. Issues

- There are many Variations between months in the PIs values for the model facilities, which are varying from the target, especially in Melahia WTP.
- Further study of problems in the facilities will be done to check for big variations, in addition some rehabilitation work will be done in Melahia to improve the situation.
- Some rehabilitation work is still needed for the new extension facilities.
- Chairman promised to push the work to finish rehabilitation activities as soon as possible (within 2 weeks' time).
- JET recommended that PIs should be checked carefully every month in order to grasp the condition of facility and analyze the reason of the result of record

2-3. Future plan

- Fix the remaining problems and push the activity to reach targeted PIs.
- Apply SOP activity in extension facilities to improve the situation.

3. NRW activity

NRW team reported the following.

3-1. Progress

- 5 year plan have been formulated for the future activity of the NRW activity.
- Teams have been formulated in all Markazes, and already trained on using Acoustic stick.
- A workshop has been held on the 30th of September, 2013 for all Markazes staffs.and all agreed to the 5 year plan and the strategy of work.
- Until now 3 Markazes started the activity by surveying the house connections with the Acoustic stick, then plot the house connections on the GIS maps and mark suspected leak points to be confirmed by help of C/P of HQ, and the Markazes working now are as follows:

a) Santa **b) Zefta** **c) Bassyoun**

- In addition to the extension to other Markazes the HQ C/P team are now responsible for detecting leaks with cooperation from the hot line department based on Customer claims.

3-2. Issues

- C/P team requested to make NRW department in each branch, in order to make sure that they are free and concentrate only to NRW activity, also ensure the sustainability of the project activity.
- Chairman refused the proposal, since already Markazes are following the plan of NRW according to HQ C/P team and under their supervision; in addition the activity only requires 2 to 3 days of work which doesn't need them to be free all week for just this activity.
- A recommendation by C/P team was to request to IWSP to start making chambers on the new networks they are currently installing or making rehabilitation, since this will help to conduct NRW activity in the future. JET also agrees this recommendation by C/P in order to make DMA.
- Chairman agrees to this proposal and requested to Mr. Adel Attia to follow up with C/P team.
- Upon request of chairman he asked the C/P team to start making a study on the reasons of Leakage such as holes in pipes, in order to avoid the same mistake in the future in new networks.
- Chairman suggested that since NRW team are getting experienced in this activity it is good time to start arranging with HCWW in order to spread the activity to other Governorates in the Nile Delta area, especially since we have time in the project and can get help from the Japanese side.

3-3. Future plan

- Complete remaining 5 Markazes according to the 5 years plan for NRW activity.
- Train key Markazes on other equipment like Ground Microphone.
- Provide Digital Camera to each Markaz for taking pictures and videos of the activity and leaks.

(End of MOM)

(2)　MCWW

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 1st Project Team Meeting in MCWW for PH-1

Date	25th June (Saturday) 2011	Signature
Time	11:00~12:30	
Place	Shebin expert office	
Attendants	**[MCWW : C/P]**	
	Mr. Samir Abdelmenem : Leader of C/P team	
	Mr. Ayman Bassyouni : Head of SOP team	
	Mr. Belal Galal : Head of NRW team	
	Mr. Saeed Abdelfatah : SOP C/P team	
	Mr. Salem Hamdy Fawzy : SOP C/P team	
	Mr. Mohamed Fawzy Awad : SOP C/P team	
	Mr. Mohamed Fathy Gaber : SOP C/P team	
	Mr. Mohamed Mostafa Shaf'e : NRW C/P team	
	Mr. Ahmed Ebraheem : NRW C/P team	
	[JICA Expert Team]	
	Mr. Mitsuhito Omori : NRW Reduction	
	Mr. Ryoji Nagao : Mechanical Equipment	
	Mr. Nobuyuki Iijima : Well Monitoring	
	Dr. Mostafa Moawed : NRW Senior Engineer	
	Mr. NAGI Gaber : Facilitator	
	Mr. Mohammed Abd El-kader : Facilitator	
	Mr. Ahmed Ragab : Interpreter	
	Mr. Ahmed Atef : Interpreter	

1. General

Expert team reported general topics.

1-1. Purpose of PTM

Project information such as progress, issues, and schedule should be shared among expert team and counterpart team.

1-2. Schedule of Japanese Expert

The team reported the schedule of Japanese experts as follows;

- Mr. Katsumi Fujii : Departure on 23rd June 2011
- Mr. Nobuyuki Iijima : Arrival on 21st June 2011
- Mr. Kiyoshi Kiyama : Arrival on 28th June 2011
- Mr. Mitsuhito Omori : Departure on 1st July 2011

2. SOP activity

C/P team for SOP reported the progress, issue, and next schedule of the Project.

2-1. Progress

(1) Primary selection of candidate facility as 'Long List' for site survey

(2) Mini-seminar on 8 June at GHAPWASCO, 9 June at MCWW

(3) Site survey progress

- The C/P explained that 55 candidates facilities have been selected and are as follow:
  - a- Surface Water Treatment Plants are Five.
  - b- Iron and Manganese Removal Plants are Twenty Five.
  - c- Wells are Twenty Five.
- The C/P explained that the progress of survey works is as follow:
  - a- Survey for five water treatment plants was completed.
  - b- Survey for four iron and manganese removal facilities was completed.
- The C/P explained the general information about the following facilities was submitted:
  - Five water treatment plants.
  - Seven iron and manganese removal facilities.

2-2. Issue for the Project

- JICA expert team and counter part team confirmed the necessity that counter part team has to work full time in the project.
- JICA expert team requested the C/P to nominate another staff to work for well ground water monitoring activity.
  - The C/P nominated one person (Mr. Saeed) to work for well monitoring and requested information about wells such as well data, construction year…….etc.

2-3. Schedule for until September

JICA expert team and counter part team confirmed the schedule until September.

- Site survey and report preparation (June & July, 2011)
- Comparison & assessment based on report to prepare "Short List" (July & Sep, 2011)
- Secondary selection of candidate facility as 'Short List' for detail assessment (Sep, 2011)

3. NRW reduction activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

(1) General information for NRW

- The C/P informed that requested data has been submitted to JICA expert team.
- The C/P informed that MCWW delivered soft copy of 23 maps of networks for 23 three areas in Munofia Governorate (10 Cities and 13 villages).

(2) Mini-seminar on 18 June at GHAPWASCO, 19 June at MCWW

- The C/P expressed his admire and much information they received from the mini-seminar that held in 19, June at MCWW.

3-2. Issue for the Project

- JICA expert team and counter part team confirmed the necessity that counter part team has to work full time in the project.

3-3. Schedule for until September

JICA expert team and counter part team confirmed the schedule until September.

- Review and Study for SHAPWASCO's Action Plan (June & July, 2011)
- Attending SHAPWASCO's seminar which will explain the selection criteria.(2 July at GHAPWASCO, 3 July at MCWW)
- Select model areas (July & August, 2011)
- Making MCWW's Action Plan (August, 2011)
- Analysis the general information for NRW by expert team and discussion with C/P team (July, August, September 2011)

(End of MM)

Minutes for 2nd Project Team Meeting (PTM) in MCWW in Phase-1 on 27th July 2011

Attendance List:

NAME	POSITION	Signature
Mr. Samir Abdelmenem	Leader of C/P team MCWW	
Mr. Belal Galal	Head of NRW team MCWW	
Mr. Ayman Bassyouni	Head of SOP team MCWW	
Mr. Mohamed Mostafa Shaf'e	NRW C/P team MCWW	
Mr. Ahmed Ebraheem	NRW C/P team MCWW	
Mr. Saeed Abdelfatah	SOP C/P team MCWW	
Mr. Mohamed Fathy Gaber	SOP C/P team MCWW	
Mr. Mohamed Fawzy Awad	SOP C/P team MCWW	
Mrs. Asma'a Reda	MCWW Planning sector	
M.Abdelkader	JICA Expert Team	
A.Ragab	JICA Expert Team	
A.Atef	JICA Expert Team	
Mr.IIJIMA	JICA Expert Team	
Mr.NAGI	JICA Expert Team	

1. General

Expert team reports general topics.

1-1. Purpose of PTM

Project information such as progress, issues, and schedule should be shared among expert team and counterpart team.

1-2. Schedule of Japanese Expert

The team reports the schedule of Japanese experts as follows;

- Mr. Nobuyuki Iijima : Departure on 3rd August 2011.

2. SOP activity

C/P team for SOP reports the progress, issue, and next schedule of the Project.

2-1. Progress

(1) 3rd July work-shop to distribute evaluation sheet, selection criteria list and example sheet .

(2) Finishing survey and being ready to do the Secondary selection of candidate facility as 'Short List' for both (SWTP & IMRF)

(3) Meeting on 10th July at JET-Shebeen office to discuss about how to collect the detailed data for the candidate sites (short list).

(4) On 17st July evaluation and scoring to select 3 SWTP & On 23st July evaluations and scoring to select 5 IMRF

(5) Meeting on 23st July with manger of selected 3 SWTP to explain data collect.

(6) Prepared to make meeting on 27st July with manger of selected 5 IMRF to explain data collect.

(7) Distribute data forms with plant manager

- 3 SWTP managers On 23st July
- 5 IMRF managers On 30st July

(8) C/P for well monitoring will explain their progress, issues, and future plan.

* C/P prepared List of Accomplishments (attached at the end) for both SOP&WELLs

2-2. Issue for the Project

No Issue

2-3. Schedule for until September

- Review the collected data for each SWTP & IMRF (July & August, 2011) Then provide JET with this updated DATA.
- Prepare process flow diagram for facilities.

o JICA expert team and counter part team confirmed the schedule until September.

3. NRW reduction activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

(1) General information for NRW

- Until 26/7/2011 (9) pilot areas from (3) Markaz were studied and evaluated to check with Dr. Mostafa if it is suitable or not, and the remaining (30) pilot area will be selected as soon as .
- (21) map for (8) Markazs are printed to check one by one and there are another (9) maps remaining .
  - The C/P informed that requested data has bee submitted to JICA expert team.

(2) Work shop on 3 July at MCWW

- The C/P will provide the necessary GIS map of networks to improve it.

3-2. Issue for the Project

- o JICA expert team and counter part team confirmed the necessity that counter part team has to work full time in the project.
- o The activities of NRW team are very poor.(they work very slow).

3-3. Schedule for until September

Following studies will be conducted by C/P team with supporting by expert team.

- Reviewing for all the data that were recorded and verified with Dr. Mostafa Mouawad.
- Checking and processing of network maps and areas that have been tested to get the (30) selected area according to the criteria such as (number of the population - the entrance point - the distribution point - the technical status of water instruments …etc) .
- Select model areas (July & August, 2011)
- Making MCWW's Action Plan (August, 2011)
- Analysis the GIS network maps for NRW by expert team and discussion with C/P team (July, August, September 2011)
- Checking the possibility to isolate the small area inside the pilot area using flow-meters. (according to Network Managers)-(part of the city or villiage)

o JICA expert team and counter part team confirmed the schedule until September.

END of MM

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 3rd Project Team Meeting in MCWW for PH-1

Date	8th October (Saturday) 2011	Signature
Time	11:00～12:30	
Place	Shebin expert office	
Attendants	**[MCWW : C/P]**	
	Mr. Ayman Bassyouni : Head of SOP team	
	Mr. Belal Galal : Head of NRW team	
	Mr. Saeed Abdelfatah : SOP C/P team	
	Mr. Mohamed Fawzy Awad : SOP C/P team	
	Mr. Mohamed Fathy Gaber : SOP C/P team	
	Mr. Mohamed Mostafa Shaf'e : NRW C/P team	
	Mr. Ahmed Ebraheem : NRW C/P team	
	[JICA Expert Team]	
	Mr. Mitsuhito Omori : NRW Reduction	
	Mr. Tomohiro Shimizu : SOP Expert	
	Mr. Hiroki Niimura : NRW Expert	
	Mr. Kenji Yamada : Hydraulic Analysis	
	Dr. Sayed Madbouly : Electrical Expert	
	Mr. NAGI Gaber : Facilitator	
	DR. Ahmed El-Baz :SOP Senior Engineer	
	Mr. Mohammed Abd El-kader : Facilitator	
	Mr. Ahmed Ragab : Interpreter	
	Mr. Ahmed Atef : Interpreter	

1. General

Expert team reported general topics.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Katsumi Fujii : Departure on 30th September 2011
- Mr. Tomohiro Shimizu : Arrival on 3rd October 2011
- Mr. Kazuhiro Umeki : Arrival on 8th October 2011

1-2. Weekly Meeting for NRW

Weekly meeting for NRW has been started since last week in order to share the progress more periodically.

1-3. Equipment

JET reported the situation of equipment as follows.

- Equipment from Japan will arrive at Cairo airport 4th of October (this noon time).
- HCWW will pass customs for equipment.
- Xerox will install the copy machine as soon as possible by request of JICA Egypt.
- JET has a plan to procure the generator in Egypt by end of October.

The team requested following.

- Store place for leak detection is needed.
- ADSL line is necessary for the Project office.

C/P promised to provide the first floor of the same building of JICA office (4mX4m). And C/P promised to follow up the (IT) sector and (Contract) department for this issue, and they will solve it soon.

1-4. Site Tour to SHAPWASCO

The team has a plan of site tour in SHAPWASCO. JET has arranged this activity with SHAPWASCO. Followings are tentative plan.

1) Date : October 10 (Mon)
2) Time: From 10:00
3) Location
   - ✓ Briefing : Headquarter
   - ✓ SOP: Moving to Zagagiz WTP
   - ✓ NRW: Moving to one pilot project site in Zagazig city and Hihiya training yard

2. SOP activity

C/P team for SOP reported the progress, issue, and next schedule of the Project.

2-1. Progress

(1) Collecting of data forms with plant manager for the;

- 3 SWTP start from 23st July
- 5 IMRF start from 30st July

(2) Preparing for the comparison sheet between selection candidate facilities.

(3) Attend to first JCC and Alex 27th, Sep, 2011seminar.

(4) 18 well facilities had been completed survey and data collection for water quality. And there are an anther 15 additional well facilities has been chosen to make same previous survey for it 3 had been finished.

(5) Electrical works:

a) general site survey had been done for all IMRF and make their reports and evaluation sheet according to the criteria (Transformer-generator-panels-staff)

b) 5 facilities has been selected according to evaluation result (Shimyatis- Mit Abulkom- Kafr Elarab- Elbatanon) IMRF and (Menouf) SWTP, 2 of them are already selected by SOP team

(Shimyatis- Kafr Elarab).

c) 3 SWTP has been selected (Shebin- Elsadat- Menouf) according to the survey and criteria.

2-1. Issue

- The Well Monitoring Data collection doesn't submitted to JET office yet, because the SOP activity was busy last 2 weeks for preparing the presentation of first JCC and seminar at Alex.
- The SOP members should be attending to all kind of meeting activities as possible to raise the knowledge between the team members and find the joint points. JET informed it to MCWW counterpart team leader.
- The SOP suffering of some problems
  1- In some facilities such as Menouf (some of instrumentation devices doesn't work or need to calibration or even need to be replaced).
  2- There is no flow meter installed on well water distributed pipe
  3- The SOP recommended to JET to choose (Gezi) well facility to be a symbol for the new generation of IMRF.
- The electrical works facing a problem which is (no power consumption meter in Menouf)
- Well monitoring: wells clay sectors are N/A

3 .NRW activity

C/P team for NRW reports the progress, issue, and next schedule of the Project.

3-1. Progress

(1) First JCC and 27th, Sep, 2011. Alex's seminar.
(2) Discussion about Action Plan on 5th, Oct, 2011.
(3) The isolation for the pilot area shall be determined by Oct, 15th 2011. In each of the 3 Markaz's.(Shebin – Elsadat – Quessna)
(4) In Quessna the isolation had been done successfully for 3 pilot area.
(5) In Shebin 3 pilot area has been selected and 2 were isolated (Arafa – Ezbet Elsantawy)
(6) In Elsadat 3 pilot area has been selected and tested isolation but not succeeded (5th-11th)

3-2. Issue

a) Shebin isolated area valves need to be replaced or repaired.
The valve will be repaired on 9-10-2011 then report to JET to continue the isolation test.
b) Choose another 2 Markaz to be ready in case
2 pilot were choose in Berket Elsaba
2 pilot were choose in Ashmoon.
c) Different between network maps, GIS and actual location.
C/P will try to confirm the right selection with network managers.

3-3 Next Schedule

- Conducting isolation for the pilot areas until Oct, 15th, 2011. (NRW)
- Confirming the network maps with network managers on the sites during isolation activity.

(NRW)

- Analyzing the results by expert team and discussion with C/P and head of their team. (NRW)
- Finalizing the first action plan. (NRW)
- Keep Data collection for the 3 SWTP / 5 IMRF and submit it to JET. (SOP)
- Get the report and data forms for WELL's monitoring. (Wells) before Mr. Ijima arrival.

(End of MM)

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 4th Project Team Meeting in MCWW for PH-1

Date	30th October (Sunday) 2011	Signature
Time	14:00～15:30	
Place	Shebeen expert office	
Attendants	**[MCWW : C/P]**	
	Mr. Samir Abdelmenem : Leader of C/P team	Samir.
	Mr. Ayman Bassyouni : Head of SOP team	Ayman
	Mr. Belal Galal : Head of NRW team	BeLAL
	Mr. Mohamed Fawzy Awad : SOP C/P team	Mohfawzy
	Mr. Mohamed Mostafa Shaf'e : NRW C/P team	
	Mr. Khaled Kazamil : SOP C/P team	Khaled
	[JICA Expert Team]	
	Mr. Mitsuhito Omori : NRW Reduction	
	Mr. Tomohiro Shimizu : SOP Expert	
	Mr. Nagao : SOP Expert	
	Mr. Hiroki Niimura : NRW Expert	
	Dr. Mostafa Moawad : NRW senior Engineer	Mostafa Moawad
	Mr. Mohammed Abd El-kader : Facilitator	
	Mr. Ahmed Atef : Interpreter	

1. General

Expert team reported general topics.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Mitsuhito Omori : Departure on 31th October 2011
- Mr. Hiroki Niimura : Departure on 7th November 2011
- Mr. Tomohiro Shimizu : Departure on 14th November 2011
- Mr. Nobuyuki Iijima : Arrival on 14th November 2011

1-2. Equipment

JET reported the situation of equipment as follows.

- Equipment from Japan arrived and did hand over from HCWW to MCWW.
- JET had a plan to procure the generator in Egypt by end of October; however it is difficult to find a suitable one in shebeen. JET continues to find it.

Both side confirmed followings.

- Store place for leak detection is needed and C/P promised other room (4mx4m).
- Equipment will be passed to the Project soon.

1-3. Possibility of changing period of the Project

JET reported about project schedule as follows.

- JICA is planning the changing period of the Project as following.
  Original period of Phase-1: Until end of March
  Modification period of Phase-1: Until end of December

2. SOP activity

C/P team for SOP reported the progress and next schedule of the Project.

2-1. Progress

- Site tour in SHAPWASCO was conducted and C/P discussed about SOP activity at Zagazig Water Treatment Plant in Sharkia.
- Model facility for WTP and IMRF were selected through detail survey as followings.
  - WTP : Sadat
  - IMRF: Shimyatis
- Other IMRF of Barman system will be conducted for SOP activity as additional facility.

2-2. Next Schedule

- Rehabilitation plan will be prepared on November and rehabilitation work will be conducted on December.

3 .NRW activity

C/P team for NRW reported the progress, issue, and next schedule of the Project.

3-1. Progress

(1) Site tour in SHAPWASCO was conducted and learned about flow meter.
(2) NRW training in SHAPWSCO was conducted October 21 and 22.
(3) Action Plan was prepared with JET.
(4) Workshop for Action Plan was conducted October 30, and Action Plan was distributed to C/P of each branches.

3-2. Issue

- Other counterpart of NRW will join for more effective activity.
- One chemist joined SOP counterpart.

3-3 Next Schedule

- To fix the location of flow meter chamber
- To making the chamber by next February
- To modify the GIS drawings

(End of MM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-1)

Minutes of Meeting for 5th Project Team Meeting in MCWW for PH-1

Date	(Dec18th, 2011) Sunday		Signature
Time	10:00~12:00		
Place	Shebeen Project office		
Attendants	**MCWW (C/P)**		**MCWW**
	Mr. Ayman Bassyouny	: Head of SOP C/P team	
	Mr. Mohamed Fawzy Awad	: SOP C/team	
	Mr. Mohamed Fathy Gaber	: SOP C/P team	
	Mr. Saeed Abdelfattah	: SOP C/P team	
	Mr. Mostafa Lotfy	:SOP C/P team	
	Dr. Eyman Zahran	: SOP C/P team	
	Mr. Belal Galal	: Head of NRW C/P team	
	Mr. Mohame Shafie	:NRW C/P team	
	Mr. Ahmed Radwan	:NRW C/P team	
	Mr. Mohamed Fawzy Bader	:NRW C/P team	
	Mr. Ahmed Elshony	:NRW C/P team	
	Mr. Ahmed Shalaby	:NRW C/P team	
Attendants	**[JICA Expert Team]**		**JET**
	Mr. Omori		
	Mr. Iijima		
	Mr. Mohamed Nagi		
	Dr. Ahmed El Baz		
	Dr. Sayed Madboly		
	Dr. Mostafa Meawad		
	Mr. Mohamed Abdelkader		
	Mr. Ahmed Ragab		
	Mr. Ahmed Atef		

1. General

Expert team reported general topics.

- ✓ About C/P tasks during the stop of JICA project office, C/P shall be continues working on schedule.

1-1. Schedule of Japanese Expert

The JET reported the schedule of Japanese experts as follows;

- Mr. Mitsuhito Omori : Arrival on 12th and Departure on 25th December 2011
- Mr. Nobuyuki Iijima : Departure 25th December 2011

1-2. Equipment

The situation of equipment as follows.

- Equipment's are still in MCWW's main stores and JET need it to be transferred to Shebeen project office store.
  - ✓ Heads of C/P will handle this matter instead of Mr. Samir soon. C/P will consider to establish the shelves in the project office store.
- JET purchased and handed over two generators to MCWW.

1-2. C/P training in Japan

C/P training in Japan was finished last week. JICA expert requested to two C/Ps in Japan to have small meeting or presentation in Egypt for reporting to other C/P Two C/Ps. C/P team shall arrange to have a meeting/presentation after coming back t of two C/P to Egypt.

2. SOP activity

C/P team reported the following.

2-1. Progress

1) SOP for water treatment facility

- C/P activities
  - ✓ 3 survey had been done to Elsadat SWTP and Gezai,Shimyatis IMRF for revising the requirements of rehabilitation for SOP according to the time schedule with agreement of Mr. Abulkhair.
- Activities with JET.
  - ✓ A visit was done with Dr. Ahmed El Baz for some parts of the Elsadat SWTP, and some specifications of the equipment were set with the C/P team, and requirements of rehabilitation will be handed to the company for tendering and procurement of the required items.
- Work shop.
  - ✓ C/P attends SOP workshop in GHAPWASCO, for the importance of P&ID, and how to select the C/P team in the stations.
- Checking model facilities by SHAPWASCO.
  - ✓ Mr. Abdel Shafi (SOP team leader for SHAPWASCO) joined for visits in Elsadat SWTP and Gezaii, Shimyatis IMRF, to be familiar with the model facilities for SOP activities.
- Preparing the block flow diagram and P&ID of all facilities.

  - ✓ A part of Elsadat has been finished, and Gezaii will be (revised), and Shimyatis will be (drawn).
- selecting the C/P
  - ✓ 28 members were selected to be C/P team in the 3 model facilities.

2) Water Quality Management

- A meeting was held with Mr. Umeki to explain the purpose of WQM and specified the activities as follows:
  - ✓ SOP will be applied in the laboratory of the chosen model facility (Elsadat SWTP), and it will start during the second phase of the project.
  - ✓ Sharing the information and experience between the 3 AC's through Work-shops.
  - ✓ Conducting site survey using the WQM questionnaire for customer complains.
- Attended WQM workshop in GHAPWASCO,
  - ✓ presented by Dr. Sayed (manager of Zagazig WTP) and Dr. Hamdy (General manager of Central laboratory of GHAPWASCO)
- Excel sheet was submitted to C/P.
  - ✓ A program was done by Mr. Umeki, and handed to C/P team, and data entry is carried out by them, C/P did the sample survey for 13 area spot and 109 costumer claim survey.
- Additional members for SOP.
  - ✓ 2 new members were added to WQM activity.(Dr. Eman as chemist and Eng. Mostafa Lotfy as GIS)

3) Wells monitoring

- Selecting the facilities where the water level meters will install.
  - ✓ 3 facilities were chosen for installing the water level meter (Kafr Elhama No.1 in Ashumon), (Zaweyat Elnaora No.2 in El Shohada), and (Bgrym No.3 in Quesa).
- Selecting the model facility for SOP.
  - ✓ 5 well facilities were selected for implementing SOP (Shubra bas, El May old, Dekma, Kom Akhbar and Kfr El Batunoun.
  - ✓ After detailed survey 1 facility were chosen for implementing SOP (Dakma in Shebeen).

2-2. Issues

- C/P team is trying to use other pickup for the Project as JICA pickup is not enough for covering the project activities.
- Since the level meter was captured in the borehole. The cause is thought to be that an electric cable of submergible pump was twined around the sensor. Therefore, level meter couldn't be installed. Solution was discussed in the PTM and C/P will try to solve it as soon as possible.

2-3. Future plan

- Drawing P&ID
  - ✓ A part of Elsadat has been finished, and Gezaii will be revised, and Shimyatis will be drawn.

- Follow up with the rehabilitation of SOP for 3 facilities.
  - ✓ Tender for Rehabilitation works will use 2 ways, One is calibration and 2nd is purchasing & installing. Now the tender doc singed by chairman and ready to be contracted by some contractors.
- The remaining level sensors for well monitoring will be installed by using 1.5-3 Inch PVC pipe in the Wells.
- The C/P will install 2 level sensors to F.M in DAKMA on each Well until Aug,2012.
- The C/P will collect general information/manual/regulation etc. regarding operation and management of well station/staff of well station, furthermore a well inventory and information of actual daily operation and maintenance activities of Dekma well station will be prepared until the end of April 2012.

3. NRW activity

C/P team reports the following.

3-1. Progress

- ✓ Choosing the areas for NRW activity and exact locations for the chambers have been done.
- ✓ 2 contractors has been purchased the tender but not yet decided.
- ✓ 2 additional members were added to NRW team (Mr. A.Elshony GIS and Mr. A.Shalaby Hyd).

3-2. Issues

There is no issues reported

3-3. Future plan

- ✓ Completing the champers construction as soon.
- ✓ Continues preparing the GIS maps for the chosen areas and correcting the mistakes in the maps almost finished.
- ✓ Transferring JICA equipment's to Shebeen store before 2nd PH starting.

_____ (End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 6th Project Team Meeting in MCWW for PH-2

			Signature
Date	1st April (Sunday) 2012		
Time	10:00～12:00		
Place	Chairman Office		
Attendants	**[MCWW : C/P Leaders]**		
	Mr. M.M.Abulkhair	: MCWW Chairman	
	Mr. Belal Galal Khallaf	: NRW C/P team Leader	
	Mr. Ayman Bassyouni	: SOP C/P team Leader	
	[JICA Expert Team]		
	Mr. Fujii	: JET Leader	
	Mr. Omori	: Deputy/ NRW Expert	
	Mr. Shimizu	: SOP Expert	
	Mr. Umeki	:SOP Expert	
	Mr. Mohamed Nagi	: Facilitator SHAPWASCO	
	Mr. Mohamed Abdel Kader	: Facilitator MCWW	
	Mr. Mohamed Abouzekry	: Facilitator GHAPWASCO	
	Mr. Ahmed Ragab	:Interpreter	
	Mr. Ahmed Atef	:Interpreter	

1. General

Opening words by Chairman and Mr. Fujii

2. SOP activity

C/P team reports the following.

2-1. Progress

- Rehabilitation work is divided into calibration work of instrumentations and installation work of equipment.
- Calibration Work: Vendor was decided to (Alnama'a Technology Company). The company will start working on 3rd of April 2012, and finish within one month.
- Installation Work: Vendor was decided to (Egypt German Company). The company will start working on 8th of April 2012, and finish by 15th May 2012.
- Preparation of P&ID: Site survey had been completed. P&ID drawing by AutoCAD is in progress, and if takes a month to finalize the drawing. (This activity can be continued in parallel

with other activities.)

- Through the discussion with C/P and SOP members in model facility, we are preparing draft monthly and daily operation records for Elsadat SWTP and Gezii IMRF.
- Customer claim survey for WQM activity is continued (250 customers until now).

2-2. Issues

- At a present, only 1 vehicle is allocated to the NRW and SOP activities for their transportation. Since increasing of site training work is expected from April, we would like to request allocation of additional car to C/P team. (Chairman promises to provide a new pick-up truck to cover both activities soon).
- To assure that SOP activity is going on the right way Gezii IMRF's laboratory should have a good chemist. (Chairman promises to assign one chemist soon).
- Due to the large quantity of work for C/P with MCWW, JET needs to free them for the Nile Delta project. (Chairman will discuss with them to work on Saturday).

2-3. Future plan

- Finishing rehabilitation work to start applying SOP in the model facilities.
- Finalizing the P&ID drawings for the model facilities.
- Making draft for SOP with reference to SHAPWASCO.
- On-site training for SOP's will start on 5th April.
- After 15th of April a work-shop for plant managers will be conducted to discuss about SOP's documents.

3. NRW activity

C/P team reports the following.

3-1. Progress

- Contractor finished construction of 1 chamber in Shebeen branch. Now contractor is working in Berket Elsab'a .
- Received second grant from JICA equipment on February 2012.
- Conducted trainings for installing and measuring of flow meters, once in SHAPWASCO with GHAPWASCO NRW C/P and second time in Abu Baker IMRF at Shebeen.
- MNF activities started in 1 area in Shebeen (Mansheyat Essam) on 26th March.
- Workshop for reading water meters (house meters) on 27th of March 2012.

3-2. Issues

- Chamber construction delay for NRW activities.
- Additional pickup truck for the project, due to conflict in activities with SOP.
- Incentives to the C/P teams for working after the standard working times of the company.
- Some troubles with chambers in Abu Agwa (Shebeen), Maglis Elmadina (Berket Elsab'a) and Taymor&Elmahkama (Quesna). Such as electric cables and high traffic location, and now

working on solving this problem.

- Due to the shortage of good technicians who helps the C/P in Nile Delta Project, the Chairman of MCWW ordered to assign the new 8 graduated students of the Water technical school to work with the project team.
- Studding for possibility of establishment for water meter maintenance workshop in each brunch (markaz).

3-3. Future plan

- MNF survey at total 3 candidate areas in Shebeen model areas will be done by the end of April 2012.
- 1 pilot area from Shebeen model areas will be select.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 7th Project Team Meeting in MCWW for PH-2

			Signature
Date	17th April (Tuesday) 2012		
Time	11:00～12:00		
Place	Chairman Office		
Attendants	**[MCWW : C/P Leaders]**		
	Mr. M.M.Abulkhair	: MCWW Chairman	
	Mr. Belal Galal Khallaf	: NRW C/P team Leader	
	Mr. M.Shafee	: NRW C/P team Member	
	Mr. M.Fawzy Bader	: NRW C/P team Member	
	Mr. A.Elshony	: NRW C/P team Member	
	Mr. A.Shalaby	: NRW C/P team Member	
	Mr. M.Fathy	: SOP C/P team Member	
	[JICA Expert Team]		
	Mr. Omori	: Deputy/ NRW Expert	
	Mr. Shimizu	: SOP Expert	
	Mr. Umeki	:SOP Expert	
	Mr. Mohamed Nagi	: Facilitator SHAPWASCO	
	Mr. Mohamed Abdel Kader	: Facilitator MCWW	
	Mr. Ahmed Ragab	:Interpreter	
	Mr. Ahmed Atef	:Interpreter	

1. General

Checking the situation by Chairman and C/P

2. SOP activity

C/P team reports the following.

2-1. Progress

- Calibration Work: Vendor was started on 3rd of April 2012, in Elsadat WTP & Gezii IMRF and it shall be finish within one month.
- Installation Work: Vendor will start to work as soon as. The company already issued the working permission but the contractor still not got it yet.
- Preparation of P&ID: P&ID drawing by AutoCAD is in progress, and the semi-final drawing will submitted by end of April 2012.takes a month to finalize the drawing.

2-2. Issues.

- JET needs to free the C/P for the Nile Delta project. (Chairman allows SOP C/P to be free Sun, Tue, Thr).
- Chairman accepts to bay incentives for C/P every month and since project started.

2-3. Future plan

- Finishing rehabilitation work to start applying SOP in the model facilities.
- Finalizing the P&ID drawings for the model facilities.
- Making draft for SOP with reference to SHAPWASCO.
- 18th of April a discussion for chemists shall held at Shebin office for how to manage SOP for laboratories
- Plant managers and network managers will conduct a work-shop about SOP's for WQM and SOP's documents on 22,23,24 of April2012.

3. NRW activity

C/P team reports the following.

3-1. Progress

- 2 chambers in Shebin Markaz have been done (MNF) Mansheyat Essam & Arafa.

3-2. Issues

- Chamber construction delay for NRW activities due to the contractor.
- Chairman decided to bay Incentives to the C/P teams for the extra working with JET.
- The problem of how to secure the equipment's in the chamber were solved by Chairman.
- JET need the C/P to work continually, and the Chairman decided to free most of them.

3-3. Future plan

- MNF survey at total 3 candidate areas in Shebeen model areas will be done by the end of April 2012.
- 1 pilot area from Shebeen model areas will be select.

Main decision of MCWW Chairman:

1- The responsibility of the equipment's will be taken by MCWW and the installation committee will act as a witness.

2- All the JICA equipment's in the store shall be taken its responsibility by MCWW.

3- The C/P will get incentives from the beginning of JICA project and it will be continue every month.

4- New members shall join the C/P when needed.

5- After discussion with the contractor of the chambers, MCWW will receive all Chamber by the end of April 2012.

(End of MOM)

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 8th Project Team Meeting in MCWW for PH-2

Date	16th May (Wednesday) 2012		Signature
Time	02:00 pm ～ 04:00 pm		
Place	Chairman Office at MCWW		
Attendants	**[MCWW : C/P Leaders]**		
	Mr. M.M.Abulkhair	: MCWW Chairman	
	Mr. Belal Galal Khallaf	: C/P team Head	
	Mr. Ayman Bassyouny	: SOP C/P team Leader	
	Mr. A.Elshony	: NRW C/P team Member	
	[JICA Expert Team]		
	Mr. Omori	: Deputy/ NRW Expert	
	Mr. Mohamed Nagi	: Project Facilitator	
	Mr. Mohamed Abdel Kader	: Facilitator MCWW	
	Mr. Ahmed Ragab	:Interpreter	
	Mr. Ahmed Atef	:Interpreter	

1. General

The team reports the schedule of Japanese experts as follows;

- Mr. Mitsuhito Omori : Departure on 19th May 2012

2. SOP activity

C/P team for SOP reported the progress and issue of the Project.

2-1. Progress

(1) Rehabilitation works at Elsadat WTP and Gezii IMRF.

- ✓ 90% of repairing & maintenance for existing devices (F.M & Level indicators..) were done and ready for calibration, by next week.
- ✓ Supplying with equipment's (new equipment's for rehabilitation works)for Elsadat will start on 17th of May.

(2) Following up the SOP records.

- ✓ C/P are following to provide the facilities with necessary record forms for monitoring the status and check it periodically.

(3) WQM

- ➢ Preparing the report of C.C.S (customer claim survey) and submitted to MCWW to check the situation.
  - Mr. Umeki is going on to prepare report of C.C.S and soon after he finished we can distribute it to MCWW so they can utilizing the data.
- ➢ Reading the laboratory SOP's of SHAPWASCO and make draft by modify necessary items through the chemists discussion.
  - Dr. Adel tasks will be as follow:
    - Reading SOP's of laboratories of SHAPWASCO and modify main points.
    - Modify the high light points according to each laboratory.
    - Send the modification to JET to review.
    - Read the C.C.S prepared by JET and submit it to MCWW after reviewing it.

(4) Well monitoring

- ➢ Collecting for level meter data. (Memory Card). "Periodically".
  - C/P keeps doing their tasks but they have small problem that one of level meter indicator device had stopped because of the battery, soon they will get spare batteries from the store.

2-2. Issue for the Project

- ➢ Rehabilitation at El-sadat.
  - Chairman MCWW decided to buy the necessary F.M for filter drain by direct order.
- ➢ Chemist assignment for Gezii laboratory.
  - Chairman instructs the central laboratory manager to assign one of chemists immediately.
- ➢ Chemist sudden retirement for Elsadat laboratory.
  - Dr. Adel will teach anther chemist of El-Sadat laboratory.
- ➢ P.C for Gezii.
  - C/P will transfer it to Gezii 17th of May.
- ➢ Preparation for Gezii Laboratory.
  - All the necessary equipment's are available at the store yard of MCWW except one device, the Chairman instructs to buy it using his authority.

2-3 Schedule for until end of June 2012.

- ➢ Follow up the collecting of records and supply the facilities with new copies.
- ➢ Read and modify the SOP's for laboratories (By chemists) and submit it to JET.
- ➢ Read and modify the previous project SOP's for each model facilities.
- ➢ Follow up the rehabilitation works.

3. NRW reduction activity

C/P team for NRW reported the progress and issue of the Project.

3-1. Progress

(1) General information for NRW activities

- ➢ Last PTM: Chairman promises to finish all chambers by end of April 2012 in last PTM, however actual situation as follows.
  - The situation of chambers construction and MNF survey in each 3 Markaz as Attachment -1.
- ➢ C/P were learned how to analyze data and how to make graph.
- ➢ C/P has been started to collect the necessary data that will be utilized next step, such as GIS reviewing the boundary, length and diameters of pipes of candidate pilot area…etc.

3-2. Issue for the Project

- ➢ JET explained that there is delay of NRW activities because of the delay of chamber construction.
- ➢ Chairman of decided to implement the remaining works through self-efforts of MCWW.
- ➢ Following up of the progress will be done by JET.
- ➢ Shortage of C/P attending for the activity
  - Chairman decided to increase the attendance of Eng. Shafe'e one more day.

3-3. Schedule for until end of June 2012.

- ➢ Conducting MNF survey in Abuagwa from next week.
- ➢ Selection of pilot area in Shebeen.
- ➢ Construction chamber and MNF survey for 3rd area in Barket El Saba
- ➢ Consumption survey at pilot area in Shebeen or Barket El Saba

End of PTM Minutes of meeting

Attachment-1

The latest situation for chamber construction works as of May 2012.

Markaz name	Chamber Location	Situation	Remaining	Handing	Remarks	M.N.F
Shebin	Mansheyat Essam	Constructed	Finished	26-03-12	Location of chamber is inside the facility.	Done (3/27)
	Arafa	Constructed	Finished	17-04-12	No problems	Done (4/18)
	Abu Agwa	Constructed	water proof isolating		The chamber full of water leakage from walls	
Quesna	El-Agiza	Constructed	Roof under constructio n	20-05-12	Location of chamber is inside the facility as M.Essam.	
	Timor	Not Constructed	All		New location of chamber was selected (No need Isolation confirmation)	
	Elmahkama	Not Constructed	All		New location of chamber was selected (No need Isolation confirmation)	
Berket Elsab'a	Maglis Elmadina	Constructed	Finished	23-04-12	No problems	Done 4/23
	Abdelsalam Arif	Constructed	Finished	23-04-12	No problems	Done 4/29
	Port Saeed	Not Constructed	All		Chamber location was changed and construction will start on 22 of May2012.	

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 9th Project Team Meeting in MCWW for PH-2

			Signature
Date	22nd July (Sunday) 2012		
Time	11:30 am ~ 12:30 pm		
Place	Chairman Office at MCWW		
Attendants	**[MCWW : C/P Leaders]**		
	Mr. M.M.Abulkhair	: MCWW Chairman	
	Mr. M.Najeeb	: Vice chairman	
	Mr. Ayman Bassyouny	: SOP C/P team Leader	
	Mr. A.Elshony	: NRW C/P team Member	
	Mr. M.F. Awad	: SOP C/P team member	
	[JICA Expert Team]		
	Mr. Fujii	: Project manager	
	Mr. Omori	: Deputy/ NRW Expert	
	Mr. Shimizu	: SOP Expert	
	Mr. Mohamed Nagi	: Project Facilitator	
	Mr. Mohamed Abdel Kader	: Facilitator MCWW	
	Mr. Ahmed Rasmy	:Interpreter	
	Mr. Ahmed Atef	:Interpreter	

1. General

The team reports the schedule of Japanese experts as follows;

- Mr. Fujii : Departure on 23rd July 2012
- Mr. Omori : Departure on 30th July 2012
- Mr. Shimizu : Departure on 23th July 2012

2. SOP activity

C/P team for SOP reported the progress and issue of the Project.

2-1. Progress

(1) Rehabilitation works at Elsadat WTP and Gezii IMRF.

- Works has been finished for rehabilitation in Elsadat 100%
- The rehabilitation works has been finished in Gezay exept magnetic flow-meter which

(2) Following up the SOP records.

(3) WQM

(4) Well monitoring

2-2. Issue for the Project

- Rehabilitation works
  - Calibration
  - Installation
- Preparation for Gezii Laboratory. (not completed)
- Electrical tools for Elsadat & Gezii
- Car problem

2-3 Schedule for until end of August 2012.

- Follow up the collecting of records and supply the facilities with new copies.
- Read and modify the SOP's for laboratories (By chemists) and submit it to JET.
- Read and modify the previous project SOP's for each model facilities.
- Follow up the remaining rehabilitation works.

3. NRW reduction activity

C/P team for NRW reported the progress and issue of the Project.

3-1. Progress

(1) General information for NRW activities

- The situation of chambers construction and MNF survey in each 3 Markaz see Attachment -1.
- C/P were learned how to analyze data and how to make graph.
- C/P starts to collect the necessary data that will be utilized next step, such as GIS reviewing the boundary, length and diameters of pipes of candidate pilot area…etc.
- Water consumption and meter accuracy were measured at Abu-agwa.

3-2. Issue for the Project

- Shortage of C/P attending for the activity and No. of working days/week.
- JET has a doubt that closing valve in Abu-agwa is not proper working (need to be replaced).
- New members of Technical school
- Car problem.

3-3. Schedule for until end of August 2012.

- Conducting MNF survey in Quessna (retry El-mahkama) & Berket Elsab'a(Mit-Om-Saleh) Markaz's.
- Analys's the data to select the pilot area in both remaining Markaz's.
- Taking decision to keep Abu-agwa or shift to Arafa depend on the valve condition (replaced/closing or not).

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Agenda for 10th Project Team Meeting in MCWW for PH-2

			Signature
Date	2nd Nov ,2012 (Sunday)		
Time	10:00 am ~ 12:00 pm		
Place	Chairman Office at MCWW		
Attendants	**[MCWW : C/P Leaders]**		
	Mr. Ezzat Elsyad	: MCWW Chairman	
	Mr. Belal Galal Khallaf	: C/P team Head & NRW Leader	
	Mr. Ayman Bassyouny	: SOP C/P team Leader	
	Mr. Saeed Abdelfattah	: SOP C/P team Member	
	Mr. M.Fawzy Awad	: SOP C/P team Member	
	Mr. Khaled Kazamel	: SOP C/P team Member	
	Mr. Adel Abderahman	: SOP C/P team Member	
	[JICA Expert Team]		
	Mr. Fujii	: Project Expert leader	
	Mr. Niimura	: Leak detection Expert	
	Mr. Nagao	: SOP Expert	
	Mr. Mohamed Nagi	: Project Facilitator	
	Mr. Mohamed Abdel Kader	: Facilitator MCWW	
	Mr. Ahmed Rasmy	:Interpreter	
	Mr. Ahmed Atef	:Interpreter	

1. General

The team reports the schedule of Japanese experts as follows;

- Mr. Fujii : Departure on 30th Nov. 2012.
- Mr. Niimura : Departure on 13th Dec. 2012
- Mr. Nagao : Departure on 28th Nov. 2012
- Mr. Ijiima : Arrival on 15th Nov. 2012.
- Mr. Umiki : Arrival on 15th Nov. 2012.
- Mr. Iwase : Arrival on 10th Nov. 2012.
- Mr. Hamano & Omura : Arrival on 18th Nov. 2012.
- Mr. Hamano & Omura : Departure on 27th Nov. 2012.
- Mr. Iwase : Departure on 28th Nov. 2012.
- Mr. Kato : Arrival on 5th Nov. 2012.

The Project for Improvement of Management Capacity of
Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

Minutes of Meeting for 10th Project Team Meeting in MCWW for PH-2

1. SOP activity

C/P team for SOP reported the progress and issue of the Project.

2-1. Progress

(1) What is the progress of Rehabilitation works at Elsadat WTP and Gezii IMRF.(C/P will report situation).
- ❖ F.M was installed

(2) Following up the SOP records (C/P will report the situation).
- ❖ Following up is going on considering the new necessary modification for Elsadat Record forms to adjust cells to be wider for hand writing.

(3) WQM (C/P will report about SOP's documents).
- ❖ SOP's documents modification is going on and it will be handed over to JET by next week.

(4) Well monitoring (Select another facility to implement SOP).instead of closed one.
- ❖ 3 Well facilities had been nominated for SOP's (Kafr Tambidy/Shebeen), (Elkom Elakhdar/Shebeen) and (Kafr Ashama/Elshohada) and then Mr. IJIIMA & C/P will select one of them instead of (Dukama) to be as a model facility for implementing SOP. C/P will support JET by the necessary data for these 3 facilities this week.

2-2. Issue for the Project

- ➢ Rehabilitation works
  - Equipments Installation For Elsadat :(F.M for circulation, Alum-Sulfate pumps and chlorine weight balance).
  - ❖ F.M is installed; one Alum-Sulfate pump will be installed next Tuesday and the Base of chlorine weight balance will be fixed soon.
  - Installation For Gezay : (Inject point & F.M.for potassium permanganate).
  - ❖ Inject pipe will be repaired this week and F.M will be installed.
- ➢ Electrical tools for Elsadat & Gezii.
  - ❖ Chairman requested C/P to make a list with the necessary tools and he will approve it.
- ➢ JICA Car Problem.
  - ❖ Chairman will discuss it with the responsible person.(Mr.M.Soliman).

2-3 Schedule for until end of Dec. 2012.

- ➢ Follow up the collecting of records and supply the facilities with new copies.(confirmed)
- ➢ Read and modify the SOP's for laboratories (By chemists) and submit it to JET. (confirmed)
- ➢ Prepare for SHAPWASCO work-shop on 14th Nov.2012. (confirmed)
- ➢ Prepare for the Steering Committee on 7th or 8th Nov,2012.at (HCWW) (confirmed) on 8th Nov.
- ➢ Prepare for JICA consultant visit for the mid-term re-view for each model facilities.(Attachment – 1).
- ➢ Prepare for JCC & Open seminar on 25th Nov,2012. at TANTA(Panorama Hotel). (confirmed)

2. NRW reduction activity

C/P team for NRW reported the progress and issue of the Project.

3-1. Progress

(1) General information for NRW activities
- ➢ The situation of Water meter reading and meter accuracy test for 3 Markaz.
- ➢ C/P were learned how to analyze data and how to make graph.
- ➢ C/P starts to collect the necessary data that will be utilized next step, such as GIS reviewing the boundary, length and diameters of pipes of candidate pilot area…etc.

3-2. Topics to be discussed in the PTM:

3-2-1. Water Balance Analysis
- ✓ Chairman comment on the meter calibration methodology and he prefer to count all miss counting meters and send to meter work shop at MCWW to check and decide whether repair or replace, but JET find that it will be difficult to do due to time shortage.

3-2-2. NRW reduction activity

2-1. MCWW Water Balance Analysis

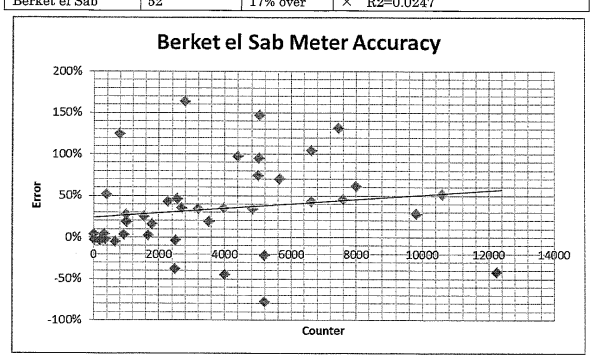
Meter Reading

	SIV(m³/d)	Consumption(m³/d)	NRW ratio
Berket el Sab	657.480	644.162	2.0%
Quesna	719.112		

※Berket el Sab; need to interview to meter readers about 115 meter consumption.

Meter Accuracy Test

	Number	Average	Relation Reading and Error
Berket el Sab	52	17% over	× R2=0.0247



MCWW NRW ratio

	SIV(l/d)	Meter Reading Consumption (m³/d)	NRW ratio	Relation NRW	AVE. NRW	+4% NRW
Berket el Sab	657.480	644.162	2.0%		16.2%	5.7%

3-2-2. NRW reduction activity

Berket el sab'a

- ➢ Customer List with Monthly Income Data is necessary

Total meter no.	883
None working meters	28
not clear meters	7
closed flats	115
meters with one reading only	8
Total no. of customers in the area	2996
Ave customers for each meter	3.392978482
Average consumption (m3/day)	657.48
NRW %	2.0%

The NRW ratio will be minus after adding 100 houses.

Interview "closed flat" to apply AVE. or No usage.

Meter Accuracy

Sample 42 meters AVE. 39% over registration.

Leak Detection Activity.

House connection Survey 3 days.

Ground Mic Survey 3 night (Security) cf. In Ghapwasco they arrange Security for Night work.
- ✓ C/P and Chairman of MCWW were informed with the necessary needs for this working period such as completely free C/P, JICA Car 3 nights, and increasing working days from 2 days to 3 days.

Quessna

Customer List and monthly Income data (Monthly Consumption Data)

3-2. Issue for the Project

- ➢ Car with the project:

Only Monday, and Wednesday is our work day. We like to request one more day for car to proceed our activity faster. (confirmed)
- ➢ Car arrangement to SHAPWASCO. And the attendance on Nov 14th 2012. (Work-shop). (confirmed)

3-3. Schedule for until Dec. 2012.

Check Attachment – 1(draft)

(confirmed)

End of MM

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-2)

M.M- for 11th Project Team Meeting in MCWW for PH-2

Date	11th Dec ,2012 (Monday)	Signature
Time	9:00 am ~ 12:00 pm	
Place	Chairman Office at MCWW	
Attendants	**[MCWW : C/P Leaders]**	
	Mr. Ezzat Elsyad : MCWW Chairman	
	Mr. Belal Galal Khallaf : C/P team Head & NRW Leader	
	Mr. Ayman Bassyouny : SOP C/P team Leader	
	Mr. Ahmad Elshony : NRW C/P team Member	
	Mr. M.Fawzy Bader : NRW C/P team Member	
	Mr. Saeed Abdelfattah : SOP C/P team Member	
	[JICA Expert Team]	
	Mr. Omori : Expert leader	
	Mr. Niimura : Leak detection Expert	
	Mr. Iijima : Well Expert	
	Mr. Kato : Expert team	
	Mr. Mohamed Abdel Kader : Facilitator MCWW	
	Mr. Ahmed Rasmy :Interpreter	
	Mr. Ahmed Atef :Interpreter	
	Mr. Amr :Interpreter	
	Mr. Yamada :Hydraulic Expert	
	Dr. Mostafa Meawad : Expert team	
	Mr. Umiki :WQM Expert	

1. General

Expert team reports general topics.

1-1. Schedule of Japanese Expert

The team reports the schedule of Japanese experts as follows;

- Mr. Tomohiro Umeki : Arrival on 5th December 2012
- Mr. Hiroki Niimura : Departure on 12th December 2012
- Mr. Atsushi Kato : Ditto
- Next Assignment
  (Fujii, Niimura, Shimizu) : From middle of January until end of February
  (Kato) : From beginning of February until end of February

2. SOP activity

C/P team for SOP reports the progress and issue of the Project.

2-1. Progress

(1) Gezy
- ➢ Following to Action plan for OJT in Gezy
  - Studying of changing Pre-chlorine dosing point from Aeration tank into Reaction chamber.
  - Increasing Run-time operation of filters from 12 hours to 14 hours and then to 18 hours.
  - Installed hanged chlorine weight balance and started recording consumption.
- ➢ Stopping of aeration process with considering water quality
  - Good results were found after stopping the aeration process.
- ➢ Reducing potassium permanganate gradually and water quality still acceptable
  - Reduction for Potassium Permanganate was gained during trial operation starting from 2mg/l then 1.5mg/l and now it reached 1mg/l and water quality still stable.

(2) Sadat
- ➢ Following to Action plan for OJT in Sadat
  - One new Alum sulphate dosing pump was installed
  - Alum sulphate dosing was adjusted to be 18mg/l and next will be adjusted to be 16mg/l.
  - PI's for each component of the facility will be done soon.
  - Another 3 or 4 facilities were selected to conduct SOP (SHEBIN-MENOUF-TALA) and Mr. Ezzat recommend to add more Compact and direct filtration facility for this selection.
- ➢ Two Chlorine weight balances were installed for both chlorine lines.

(3) WQM
- ➢ Water quality expert start his activity with counterpart.
  - Expert just started
  - Chairman recommended to hold a training program for Well station's Chemists by Mr. Umiki and Dr. Adel to teach them how to deal and manage each Well facility according to the different situation of each Well location, That will be helpful for monitoring Chlorine dosage.

(4) Well monitoring
- ➢ Start of calibration for existing meter by comparison with portable flow meter.
  - One of NRW C/P will attend with Mr.Iijima today to install and compare between F.M reading and existing meters in ASHAMA well station.

(5) Hydraulic analysis
- ➢ Expert has an idea to conduct activity at well model facility. The team will discuss with leader of SOP & NRW, and request to provide counterpart soon.
  - Hydraulic analysis department in MCWW shall support Expert team with all necessary data.

2-2. Issue for the Project

3. NRW reduction activity

C/P team for NRW reports the progress and issue of the Project.

3-1. Progress

(1) Progress for each area

1) Barket El Saba
- ➢ Calibration and cleaning of around 35 meters out of 883 meters were finished in Shebeen workshop without record.
  - Calibration & Cleaning were done for all the meters recommended by the meter reader (57) and the remaining (186) meter will be calibrated by C/P at site (10% only) with normal method (by pucket).
- ➢ We decided to stop leakage survey with making a hole in order to avoid water coming up to surface ground.
  - For the time being C/P will continue leak survey in another area(in Sheben) until all meters cleaned in the pilot area in Berket Elsab'a

2) Quesna
- ➢ Calibration and cleaning of around 470 meters out of 720 meters were finished in their workshop without maintenance and record.
- ➢ 485 meter were calibrated out of 470
- ➢ Now calibration work is stopping due to branches confusing through different instructions from our side.
  - No, it didn't stopped, and some parts were supplied (Rings) to branch's work-shop.

3) Shebeen
- ➢ Activity in Abo Agwa has been stopped since July due to no replacement of existing leakage valve.
  - Chairman instructs the network manager to replace the valve within 3days.

(2) Confirmation of activity for current NRW department

The team discussed with NRW department. The team will consider collaborating with NRW department.
- JET will have a meeting with NRW Department after this PTM to check their availability to attend leak detection survey tomorrow with branch's C/P and see if they can supply this training with extra equipment's.

3-2. Issue for the Project
- ➢ Quesna Branch is facing the problem about spare parts. Damaged parts of many meters can't be changed due to shortage of spare parts.
  - Chairman said in case there were no spare parts so just clean the meter will be done for the time being. (Or until MCWW can get the new meter's supplied by SHAPWASCO).
- ➢ Cleaned meter for Barket Saba were fixed to existing location with damage.
  - New meters rings were supplied and fixed to those damaged meters.
- ➢ In case that all meters will be needed cleaning, the team will face same problems and this action needs so much time. The team proposes that only necessary maintenance meter will be clean and replace. The team will try to reduce error percentage; however it is so difficult to control less than 5%. The team recommends acceptable percentage is more than 10%, for example.
  - These points were discussed and Chairman accepted the percentage up-to 10% and if it will be more he will discuss with JET.
- ➢ Abo Agwa situation is still keeping. In case the valve can be repaired, the team will start calibration work at Abo Agwa. In case the valve can't be repaired, we will change our pilot area. Under this situation, the team proposes three candidate areas shall be checked the supposed leak point by only acoustic rod before starting cleaning.
  - Chairman instructs the branch manager and network manager in Sheben Markaz to replace the valve within 3 days.
- ➢ The situation of C/P attendance has been improved step by step. For example, Mr. Shony has worked every day until five o'clock. On the other hand, the team needs more support of counterpart.
  - The Chairman instructs C/P to not work at site without ID card of their position in MCWW, (To show it if necessary).

End of M.M

Agenda for 12th Project Team Meeting (PTM) in MCWW In Phase-2 On 31st January 2013.

Date	31st January (Thursday) 2013.	Signature
Time	10:00 am ~ 02:00 pm	
Place	Chairman Office at MCWW	
Attendants	**[MCWW : C/P Members]**	
	Mr. Belal Galal Khallaf : C/P team Head	
	Mr. Ayman Bassyouny : SOP C/P team Leader	
	Mr. Mohammed Fatthy : SOP team member	
	Mr. Saeed Abdelfattah : SOP team member	
	Mr. Mohammed Shafee : NRW team member	
	Dr. Adel Ibraheem : SOP team member	
	Mr. Mohammed Fawzy Awad : SOP team member	
	Mr. A.Elshony : NRW C/P team Member	
	[JICA Expert Team]	
	Mr. Fujii : JICA Team Leader	
	Mr. Omori : Deputy/ NRW Expert	
	Mr. Niimura : Leak detection Expert	
	Mr. Shimizu : SOP Expert	
	Mr. Yamada : Hydraulic Analysis Expert	
	Dr. Sayed : Electrical Expert	
	Mr. Mohamed Abdel Kader : Facilitator MCWW	
	Mr. Ahmed Rasmy :Interpreter	
	Mr. Ahmed Atef :Interpreter	
	Mr. Amr :Interpreter	

1. General

Expert team reports general topics.

1-1. Schedule of Japanese Expert

The team reports the schedule of Japanese experts as follows;

- Mr. FUJII : Arrival on 15th January 2013
- Mr. Tomohiro Shimizu : Arrival on 15th January 2013
- Mr. Hiroki Niimura : Arrival on 15th January 2013
- Mr. Omori : Departure on 2nd Feb 2013.
- Mr. Yamada : Departure on 10th Feb 2013.

2. SOP activity

C/P team for SOP reports the progress and issue of the Project.

2-1. Progress

(1) Gezy

- Changing of Filtration valves
- Changing of Cl Inject point from aeration tank with considering water quality
- Results of reducing potassium permanganate.
- The new installation material in the plant.(Adjusting for concrete weir reaction chamber).

Now we are in the OJT and the following are done:

- We succeeded to reduce the Permanganate dosage from 2mg/l to 1ml/l
- We succeeded to reduce back wash times from 3/day to 1/day
- Changing Cl injecting point from Acration tank to
- Re-activate the recycling system for the sludge and back wash water too.

(2) Sadat

- Changing for damaged Alum valves.
- Tow chlorine weight balance was installed on both lines.
- Starting of circulation in the clarifier.
- C/P succeeded to reduce the Alum sulfate amount from 22ml/l to 16ml/l
- C/P activate the Sludge circulation and it needed to clean-up the all 14 drying bed first, then they install the necessary equipmentes such F.M.
  - ✓ The SOP C/P were chose 4 additional stations to implement and extend for the SOP, Kafr Elbatanon & Tokh Tambisha as Gezy (IMRF). Sheben & Tala as Elsadat (SWTP).
  - ✓ Next week C/P promises to submit the PI's for IMRF & SWTP to JET.

(3) WQM

Water quality expert organized the C/P activity during his absence as follow:

- Distribution of criteria of QC for the Lab of SWTP & IMRF & WPS.
- Only WPS was finished and other would be later.
- Break point + Chlorine dosage instruction sheet for lab + record sheet for Operator (Gezy & Ashama).
- For operator at Ashama(WTP) was done but Gezy (IMRF) not yet.
- Conducting break-point test once a month until March2013.then periodically every 6 months.
- Done for January2013. And will conduct on Feb and March too.

- Distribute a hard/soft copy of SOP's for Lab&QC.
- Some necessary modification for Lab' sop should have done to complete it all, but QC' sop is not yet started.
- Monitoring of auditing activity Depend on the previous point
- Report to Chairman about the result of the training (how to adjust Chlorine dosage)
- This training had been done for Ashama Operator and another 2 Well station.

(4) Well monitoring

JET recommended an action plane to be done by C/P from January to May 2013. As follow:

- Confirmation and completion of P&ID of the facility, general layout of Well station and facility inventory such as (Pump, Motor, Manufacture year..).
- Most of these data were done and JET has a copy from P&ID.
- Modification of existing SOP which prepared by SHAPWSCO.
- About 30% of the SOP was modified and remaining part will finished soon.
- Installing some additional equipment which necessary for implementing SOP at the facility such as (Chlorine Weight balance….)
- Soon after the necessary equipment's and facility modification finished, a studding for 3 types of relations shall be made by JET and C/P such as (Relation between Flow & Water quality, Flow & G.Water level, The impacts between each 2 Wells in the facility).
- Submit the data record form sheet to the operators at the facility.
- The record sheet was submitted to the facility operator and he is recording sense this week.

(5) Hydraulic analysis

- A meeting between C/P (Mr. Saeed, Mrs. Nashwa (GIS- water-cad) & Mr. Yamada was held to explain the activity and collect the necessary data of Ashama Well station.
- The submitted data doesn't compatible with JET P.C so after this meeting Mr.Yamada will have a meeting again with GIS try to solve the problem with them.

C/P hold a meeting with Chairman and they get approval to ceriate a new SOP department followed directly and managed by Chairman himself, but nobody knows when will activate this.

2-2. Issue for the Project

- Natural agents caused high turbidity in the intake Canal at Elsadat SWTP.

<u>The following is requested by Mr. Iijima:</u>

Please ask/tell following item to Mr.Saeed at the time of next PTM. Does he carry out the analysis of operation record and extraction volume from the wells and supply volume to the network? Only recording is no meaning. Then If Mr. Saeed carries out analysis of them, please send me an example.

2-3 Schedule for until end of February 2013.

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3. NRW reduction activity

C/P team for NRW reports the progress and issue of the Project.

3-1. Progress

(1) Progress for each area

1) Barket El Saba
   - Pilot area meter reading (consumption) had been done twice.
   - Waiting for data analyzing to get NRW ratio.
   - Re-reading of about 220 meter to (re-confirm) again before analyzing the data.
   - This 220 meter shall be re-reading soon.
   - House connection survey by C/P for area 1&2 had been done, and expecting some leak points.
   - The expected leakage points were 4 at Elteratin using listening stick.
2) Quwesna
   - Pilot area meter reading (consumption) had been done twice.
   - Waiting for data analyzing to get NRW ratio.
   - Re-reading of about 240 meter to (re-confirm) again before analyzing the data.
   - This 240 meter shall be finish re-reading soon this week.
   - Calibrating another 35 meter to increase the percentage of NRW.
   - Done and it is already add to the meter error percentage.
   - House connection survey had been done by C/P at the pilot area.
   - From next week C/P will start leak detection survey by G-Microphone in order to repair it.
3) Shebeen
   - The activity is post ponded.
   - House connection survey only had been done at pilot area 1&2.

3-2. Issue for the Project

- Data collected by Berket Elsaba'a meter readers for 3 times are feck and mismatching with JET demands. (date, time, type, missed fraction, house remarks) all are wrong.
- C/P in Berket Elsaba'a isn't cooperative. (meter readers)
- Collecting meter reading of area 1 at Quwesna had been done by C/P without any help

from branch readers so there is no customers name found, and many subscribers No. are missing too.

- C/P will try to get the subscribers name and street name from branch records.
- All meters in Quwesna pilot area were not cleaned.
- JET reported to C/P but no answer.
- The team has to finish the water balance analyses after repair at least at two areas (Quwesna & Barket elsaba'a) in accordance with PDM.
- At the end of meeting C/P think that they can only finish 1 area which will be Quwesna by the end of Feb,2013.

3-3. Schedule for until end of February 2013.

- On 13th of Feb, 2013 SHAPWASCO will conduct training at Hehya training yard for the nominated NRW C/P, 2 persons from each branch.
- C/P team leader promises that MCWW will send about 16 person to Hehya training yard on 13th of Feb fully equipped and trainers too.

End of M.M

Agenda for 13th Project Team Meeting (PTM) in MCWW In Phase-3 On 2nd June 2013.

Date	2nd June 2013.		Signature
Time	2:30 pm ~ 04:00 pm		
Place	Chairman Office at MCWW		
Attendants	**[MCWW : C/P Members]**		
	Mr. Ezzat Elsayad	: MCWW Chairman	
	Mr. Ayman Bassyouny	: SOP C/P team Leader	
	[JICA Expert Team]		
	Mr. Fujii	: JICA Team Leader	
	Mr. Omori	: Deputy/ NRW Expert	
	Mr. Shimizu	: SOP Expert	
	Mr. M.Nagi	: Project Facilitator	
	Mr. Mohamed Abdel Kader	: Facilitator MCWW	

1. General

Expert team reported general topics.

1-1. Schedule of Japanese Expert

The team reported the schedule of Japanese experts as follows;

- Mr. Tomohiro Shimizu : Departure. on 13th of June 2013.
- Mr. Niimura : Departure on 4th of July 2013.
- Mr. Yamada : Arrival. on 2nd of June 2013.
- Mr. Ijima : Arrival. on 2nd of June 2013.

1-2. Events in phase 3

- The evaluation of the project will be done in November by JICA, an open Seminar will be held to show the progress and activities done so far.
- It is important to show JICA the efforts done for dissemination of the experience to other Markaz and ACs.
- JET will recommend to HCWW that big Seminar by HCWW will be held in February to show the results of the project to other ACs, other donors, and other related organizations.

1-3. Steering Committee and JCC

JET will arrange steering committee and JCC with HCWW in the near future in order to discuss annual plan of operation for phase-3 (APO3).

2. SOP activity

C/P team for SOP reported the progress and issue of the Project. OJT has been conducted as

followings with some results.

2-1. Progress

(1) Gezy

- Changing chlorine injecting point to be after Aeration tank
- Re-leveling the weirs successfully
- Aeration system is stopped for a while
- The flow meters for pre-Chlorine & post Chlorine were calibrated.
- The Permanganate dosage reduced from 2mg/l to 1ml/l.
- The back wash times reduced from 3times/day to 1time/day

(2) Sadat

- Some components to be repair are considered
- Gate valve between filter washing & sludge sumps should be repaired to apply recycling of back wash water.
- Suction pipe of at sludge drain sump should be raised of about four meters of the existing level in order to avoid sludge suction.
- The three manual valves on the header of sludge drainage pumps should be changed to be electrical valves for easy control the drainage water to recycling or sending to desert areas. The existing manual is very difficult to be opened or closed manually as reported by the plant manager.

2-2. Issue for the Project

JET and Chairman held a discussion about following topic.

- What is the plan of MCWW to Extend the SOP activities to other Markaz in Minufia?
- How will MCWW extend SOP activities to other Delta Governorates?

The Chairman commented that MCWW has to cover SOP activities to his governorate first, and it would take long time, after that we can consider about other delta GOV.

3. NRW reduction activity

Chairman and NRW JET expert held a discussion about the latest situation as follow.

- Water balance will be finish within this month
- 20 Acoustic rods have been provided by MCWW will be distributed to 8 branches (C/P)
- C/P will choose pilot areas in 8 branches to conduct house connection survey.
- The MCWW team for Non- revenue water and C/P will collaborate together for the time being and near future both of them shall be merged.
- JET, C/P and the MCWW for Non-Revenue water department will have discussions for extend plan.

END OF M.M

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (Phase-3)

Minutes of Meeting for 14th Project Team Meeting in MCWW for PH-3

Date	27th Nov. 2013		Signature
Time	09:00 am ~ 11:00 am		
Place	Chairman Office at MCWW		
Attendants	**[MCWW : C/P Leaders]**		
	Mr. Ezzat Elsayad	: MCWW Chairman	
	Mr. Ayman Bassyouny	: SOP C/P team Leader	
	Mr. M.Shafee	: NRW C/P Team	
	Mr. A.Shony	: NRW C/P Team	
	Mr. M.Fawzy	: NRW C/P Team	
	[JICA Expert Team]		
	Mr. Omori	: Vice of JET leader	
	Mr. Mahmoud Abdelkader	: SOP local expert	
	Mr. M. Abdelkader	: Facilitator	
	Mr. A.Atef	: Interpreter	
	Mr. Amr Ezzat	: Interpreter	
	Mr. A.Tahoun	: Interpreter	

1. General

2. SOP activity

C/P team for SOP reported the progress and issue of the Project.

2-1. Progress

- C/P presents a detail progress for the main project facilities (Elsadat SWTP - Gezii IMRF – Ashama WP).
- C/P presents the detail progress and issues for the extension facilities (Shebeen SWTP – Minouf SWTP – Kafer Elbatanon IMRF – El batanon WP – Elkom Elakhdur WP).
- MCWW Chairman asked about the Alum-sulfate problem in Elsadat SWTP, JET explain that target of Alum-sulfate is an activation for the plant stuff to try to decrease the consumption of Alum-sulfate only (while nobody can fix a target for Alum-sulfate due to the raw water Variety from season to anther or raw water condition), and the dose should be located by laboratory Jar test.
- This does not prevent the continuity of the work experiments for reducing the Alum-sulfate

consumption as long as no effect on water quality.

- Chemists from Shebeen SWTP, Minouf SWTP and Sadaat SWTP, meet to discuss the measuring method of Alum Sulfate Dose (Concentration - Calculation Method) in order to unite the method of measurement.
- The PI's for the chemical consumption in the extension facilities proved that Minouf SWTP is 1st (Due to Longitudinal Clarifiers, Elsadat SWTP is 2nd and Shebeen SWTP is 3rd position as too much of Mechanical and technical failures.
- There is modification was done at Shebeen SWTP in the Alum-sulfate mixer tank to keep Alum Sulfate concentration at the same rate in the tank (By Adjusting Mixer's Fan).
- Repairing for 3 sedimentation basin from total 4 in Shebeen SWTP was done.
- C/P collected the data of Elkom Elakhdur WP, which operated for 45 days according to operation schedule made by JET and C/P, and the result was (10000 Kwh reduced "plant manager "said).
- Hydraulic analysis started for Elkom Elakhdur WP served area (including Batnon WP, Mit Mousa Direct Filtration).

2-2. Issue for the Project

- JET recommended changing the Chlorine dosing point in Shebeen SWTP, and C/P welling to follow the recommendation As soon as possible.
- Filters have a problem in M. blocks in Shebeen and Gezii; the C/P said that the rehabilitation work would be start soon by an Outsource Company.
- About Alum-sulfate raw concentration problem, the Chairman recommended to search the raw concentration by MCWW chemists in order to issue an official letter to the ministry of health about it.
- JET requested to operate the proper pump units with proper Wells in order to reduce the power consumption (Ashama WP, Gezy IMRP), JET gives an example for the proper pump unit for each Well diameter. Example: Well with 10-inch use pump unit 40-50 Kw.
  Well with 12-inch use pump unit 60-75 Kw.
- The Chairman orders the Electrical Engineers of MCWW to install the power factor to reduce the power consumption in the facilities.
- The Chairman requests C/P to issue a letter to make the necessary changes in the Well facility to get the proper pump operation.

3. NRW reduction activity

C/P team for NRW reported the progress and issues of the Project.

3-1. Progress

(1) General information for NRW activities

- HQ CP has selected the surveyors to work as C/P in each branch.
- Handing over the acoustic rod (JICA one and New purchased one by MCWW) to all selected branches (2 for each).

- Handing over 3 ground microphone for 3 branches.
- Most of GIS maps were submitted to all Surveyors in the branches
- Train all branches surveyors on how to locate the house connections on the map.
- Make survey schedule by each branch
- Make the C/P follow-up schedule 2 days/month for each branch.
- Chairman decided to pay incentives to the surveyors who make good efforts.

3-2. Issue for the Project

- C/P has been facing a problem of car arrangement with SOP team. The Chairman ordered allotment of one pick-up for NRW reduction activity for 2days continually and the other 2days will be coordinated with SOP team. NRW team can work for 4days/week.
- C/P has been facing a problem of branches surveyors who does not understand how to use the map. The Chairman requested the HQ C/P to concentrate on those branches for a while during their follow-up.
- JET also recommended that C/P and NRW department should support technical matters for leak survey during their follow-up and should follow up 5 years plan for NRW reduction in order to continue NRW reduction activity practically and perpetually.
- The Chairman explained that countermeasure of NRW reduction is divided into Technical part and Commercial part, and both are important. MCWW concentrates on reduction of commercial loss as it is a competition base between companies. Physical loss can be reduced by effort of leak survey on 5 years plan.
- JET advised to hold a 3month meeting between HQ and branches managers and surveyors with the attendance of MCWW Chairman in order to share the progress and issues in each branch, The Chairman recommended to hold this meeting every 1month.

End of PTM Minutes of meeting

添付資料-6:　配水管理活動における方針会議協議議事録

MINUTES OF MEETINGS
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT
FOR
THE PROJECT FOR IMPROVEMENT OF MANAGEMENT CAPACITY OF OPERATION AND MAINTENANCE FOR WATER SUPPLY FACILITIES IN NILE DELTA AREA

The Japan International Cooperation Agency (hereinafter referred to as "JICA") has dispatched a mission (hereinafter referred to as "the Mission") headed by Mr. Yoshiki OMURA, Senior Advisor, JICA to Egypt from June 30 to July 6, 2012 for the purpose of consultation on the Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area (hereinafter referred to as "the project").

During its stay in Egypt, the Mission exchanged their views and had a series of discussions to share the issues to be solved, and its solution of the pilot project in Zagazig, Sharkiya Governorate with Holding Company for Water and Wastewater (hereinafter referred to as "HCWW") and Sharkiya Potable Water and Sanitation Company (hereinafter referred to as "SHAPWASCO").

As a result of discussions, JICA and Egyptian authorities concerned came to agreement on the matters referred to in the document attached hereto.

Cairo, July 5, 2012

Mr. Yoshiki OMURA Leader, JICA Mission, Senior Advisor, Japan International Cooperation Agency, Japan	Mr. El Sayed Nasr Project Director, Chairman, Holding Company for Water and Wastewater, The Arab Republic of Egypt
Mr. Katsumi FUJII Chief Advisor, JICA Expert Team, Japan	Dr. Salah Bayoumi Project Manager, Head of Project Sector, Holding Company for Water and Wastewater, The Arab Republic of Egypt
Mr. Ahmed Abdeen Project Co-Manager, Chairman, Sharkiya Potable Water and Sanitation Company, The Arab Republic of Egypt	

As a result of discussions, JICA side and Egyptian side agreed on the outline of the pilot project for Activity-4 Water Distribution Management as follows;

1. Purpose of the Pilot Project (4th Output described in the Project Design Matrix as of September, 27th, 2011)
The water distribution management capacity is improved in Sharkiya Governorate as an advanced model[1].

2. Pilot project site

2.1 Ten monitoring points of service pressure are to be selected to monitor service pressure at critically low pressure points of Zagazig city and preferably at least one point each for each zone.

2.2 Seven flowmeters will monitor the inflow into and outflow from the Zone No.4 and the other seven will monitor production of well fields therein of the service area of Zagazig city as shown in the chart.

3. Outputs of the pilot project

3.1 Water demand patterns (daily demand curve) indicating peak hour demands are grasped based on real-time flow data of pilot area (Zone No.4) and pressure data.

3.2 The service reservoirs are effectively utilized for balancing WTP output and peak hour demand and monitor the effect with flow meter of pilot area.

3.3 Zagazig WTP, of which production is currently variable to reflect hourly demand fluctuation, is operated at a stable rate with minimizing both fluctuations of water production and supply of groundwater.

3.4 Integrated operation of the distribution system is established among General Department of Zagazig WTP, General Department of small WTP and wells, and General Department of water distribution network and technical support.

3.5 Basic information of water distribution is collected and analyzed such as per capita demand, peak factors and demand pattern (variations).

[1] With this purpose, the pilot project is implemented aiming at improvement of service pressure and future introduction of district metering zones.

4. Main Activities

4.1 Daily Demand

4.1.1 To collect and analyze operational data such as WTP production, distribution pump operation, water level of reservoirs, service pressure, well operation (pressure and running time) and air temperature.

4.1.2 To analyze the water demand pattern with flow data and pressure data.

4.2 Service Reservoir

4.2.1 To try and establish demand-oriented and effective utilization of the service reservoirs with reservation of emergency water.

4.2.2 To monitor the effect of additional discharge from service reservoirs with water flow data and service pressure.

4.2.3 To review the operation pattern of distribution pumps.

4.3 Zagazig WTP

4.3.1 To establish an operation program or a daily production rate of WTP based on day-to-day water demand forecast to minimize fluctuation of production rate.

4.3.2 To implement the stable WTP production.

4.3.3 To monitor the water level of reservoirs with stable WTP production and review the operation.

4.4 Integrated Operation

4.4.1 To hold discussions in each of three general departments relating water distribution of Zagazig, finding obstructions and solutions for streamlining communication and mutual cooperation.

4.4.2 To train well operators for timely switching ON/OFF of well pumps, reading pressure gauges, and recording time and pressure.

4.5 Basic Information

4.5.1 To analyze the per capita demand.

4.5.2 To review the basis of a strategic development plan of SHAPWASCO based on the per capita water demand.

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5. Input by JICA

5.1 Provision of ten pressure gauges with telemetering utilizing cellar phone network

5.2 Provision of fourteen telemetering flowmeters[2] for pilot area (Zone No.4) with telemetering utilizing cellar phone network

5.3 Central monitoring facilities including display and software

5.4 One digital pressure gauge each for distribution pump station of new and old plants

6. Input by the Egyptian side

6.1 Provision of an analog pressure gauge at each well field

6.2 Construction of seven chambers to accommodate flowmeters provided that an existing chamber is examined for its suitability to the project.

6.3 Construction of the central monitoring room

6.4 Provision of protection measure for flowmeters and be installed in well field

6.5 Wiring work within the Zagazig WTP from the following facilities to the central monitoring facilities:

Existing water level gauge of the service reservoirs;
Existing raw water flowmeter;
Existing clear water (distribution) flowmeters; and
One digital pressure gauge each for the distribution pump stations of new and old plant.

6.6 Maintenance of telemetering system

6.7 Operation and Maintenance cost of telemetering system such as power charge and communication fee

6.8 Replacement of the existing AC pipe with PVC/PE/Steel pipe for flow measurement sections

Appendix Chart of service zones, Zagazig City

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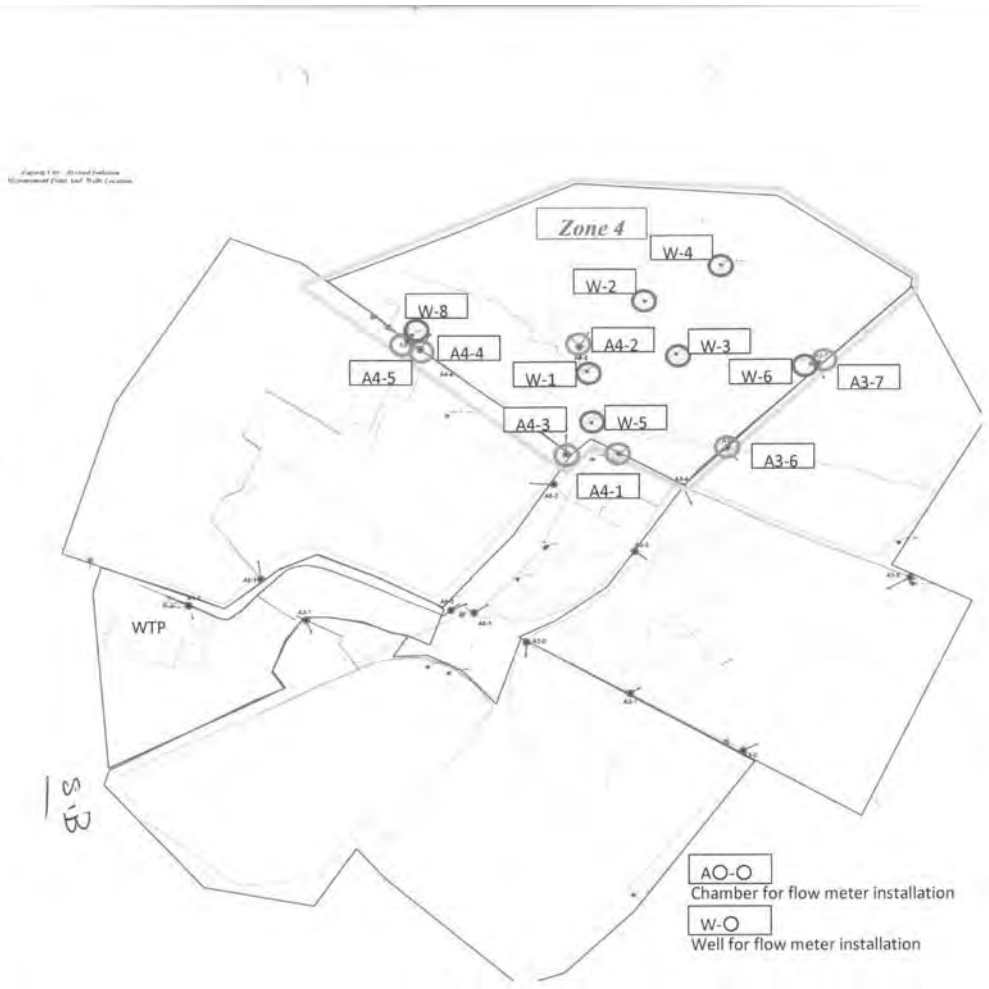
[2] Technical specification of flowmeters is of compactness and compatibility to site conditions.

Block	Diameter (mm)	Material
A1-1	400	AC
A2-1	600	GRP
A2-2	250	PVC
A3-1	150	PVC
A3-2	300	PVC
A3-3	200	PVC
A3-4	400	AC
A3-5	400	AC
A3-6	200	AC
A3-7	100	PVC
A4-1	300	AC
A4-2	250	AC
A4-3	250	ST
A4-4	150	PVC
A4-5	150	AC
A5-1	400	AC
A5-2	300	ST
A6-1	450	CI
A6-2	300	PVC

PVC	Poly Vinule Chloride Pipe
AC	Asbestos Cement Pipe
GRP	Glass Reinforcement Pipe
CI	Cast Iron Pipe



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